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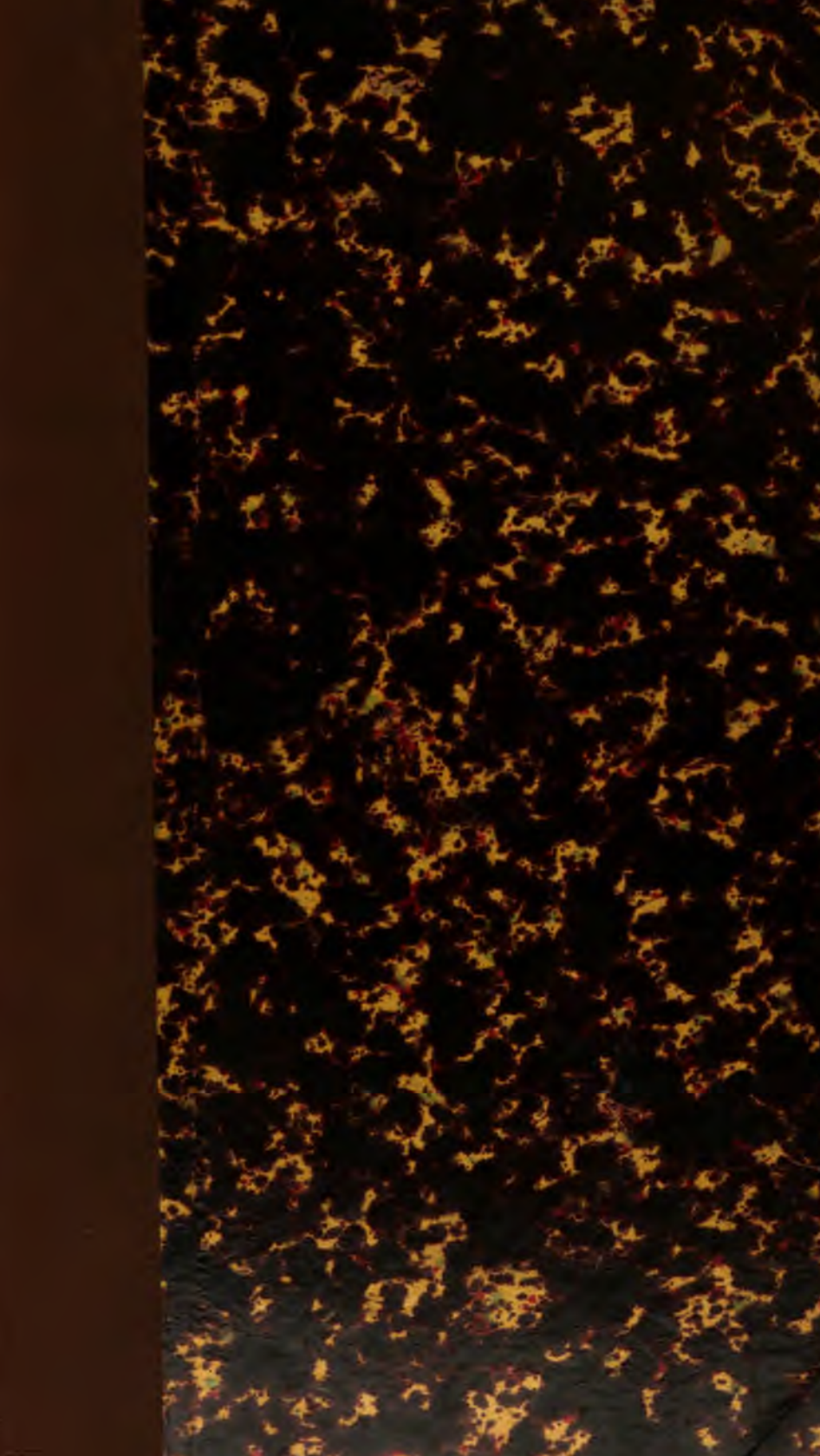
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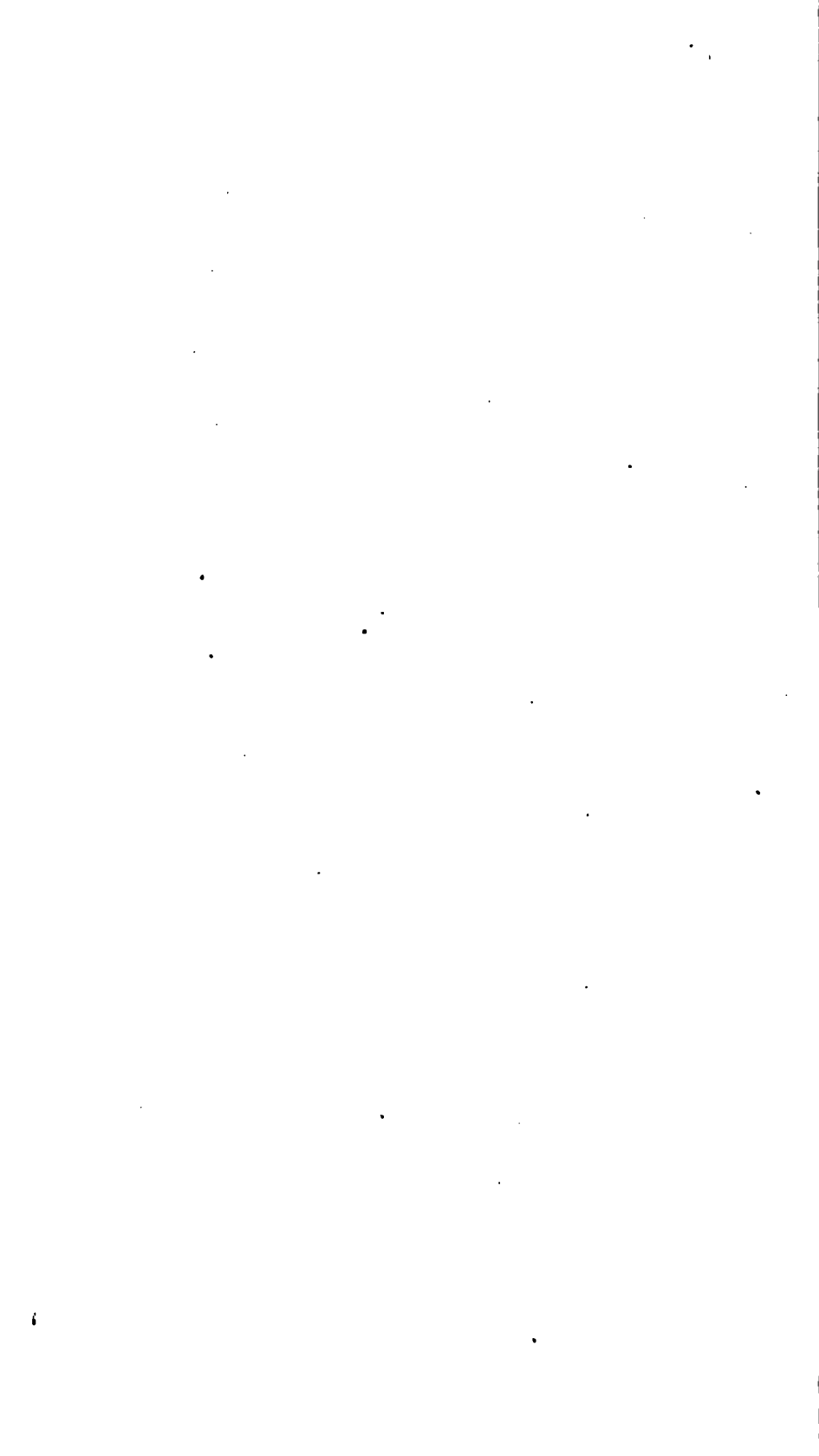
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THE ECLECTIC  
JOURNAL OF MEDICINE.

*EDITED BY*

JOHN BELL, M.D.,

LECTURER ON THE INSTITUTES OF MEDICINE AND MEDICAL JURISPRUDENCE;  
MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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# THE ECLECTIC JOURNAL OF MEDICINE.

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## RETROSPECTION IN MEDICINE.

KNOWLEDGE is said to be accumulative and progressive. It may, in this respect, be compared to a river, which, originating from numerous sources, and contributed to by various rivulets, at length flows along majestically through many lands, diffusing fertility on either side, and bearing on its surface vessels freighted with the products of remote and different climes. But the course of knowledge, as measured by the history of the human mind, is, also, at times not unlike certain rivers, which, flowing rapidly for a space, are lost in sands, or disappear in swamps, to show themselves again after an interval. Nearly all the sciences have been shrouded for a long series of ages after they had been brought to a certain degree of advancement. Astronomy, reduced to a system and placed in many respects on a true basis by Thales, Aristarchus of Samos, Meton, and others of the Grecian school, made little progress after the age of Ptolemy; or, we should rather say, it was in a great measure lost to the world, until the time of Copernicus, a period of more than seventeen hundred years. Natural History, and especially of animals, was systematically arranged by Aristotle in a manner which subsequent writers down to the present day have not, as regards several of its essential features, been able to improve: and yet how long the period of complete obscurity of scientific method and accurate description from the days of the great Stagyrte down to those of Linnaeus the Swede; for with this latter in modern times regular classification begins. By this avowment we do not mean to deny the merits of the labours, at an earlier date, of Belon,\* Gessner and Ray.

\* Belon, a French physician, who wrote about the middle of the sixteenth century, ranks deservedly high as a naturalist. He was the first who introduced in modern times systematic classification in Zoology. To the members of the medical profession has Natural History in all its branches, ever since the time of Belon, been constantly and greatly indebted.



Much as we may pride ourselves, at this time, on the various and wonderful applications of the arts both of use and ornament, we cannot deny that, in remote antiquity, some of these acquired an extension and power of which we have now lost all knowledge. That a nation should not venture to imitate such gigantic enterprises as the erection of pyramids and the other immense architectural creations of the Egyptians, need excite no regret; but we would fain learn, even with our enlarged knowledge of the metals, as tools and machines, how that people contrived to cut and sculpture with such luxuriance of figures and ornaments, and such nicety of detail, their basaltic and granite rocks. Mysterious, also, to us, is the art by which they could fix colours on the walls of their temples, so that they retain a brilliancy unequalled and unapproachable even in modern times. It is, indeed, mortifying to our pride, in this age of boasted superiority over any preceding one, to see, that in the very instance of colouring, in the fine arts, we should be gradually retrograding; and now the artist must acknowledge with shame, that it is out of his power to fix colours on the canvass or on glass, in a manner to insure their duration, equal to those everyday specimens in painting, during a period which we call Gothic and half-civilized. A visit to the Greco-Roman towns of Herculaneum and Pompeii, and a subsequent inspection of objects obtained from them and collected in the museum at Portici, will serve to rebuke the vanity of the present age, by manifesting its inferiority in the added embellishments of art to substantial domestic architecture; and in the taste, variety and convenience of objects used in domestic economy. Whether for culinary convenience, saving labour, or appropriate ornaments, there nearly all modern discoveries have been anticipated; and there, too, many things are yet without imitation or adequate substitute. We had long been accustomed to pride ourselves, among other matters, on glass as a modern invention. Recent observations show that this article was used in Pompeii for the same purposes to which it is now applied.

It is no part of our design to carry out in detail this view of the long and great interruptions to the progress of the sciences and arts. We merely desired to arrest the attention of our medical brethren to the fact, the better to prepare them for receiving favourably a brief notice of similar breaks and voids in the course of that knowledge which exerts a powerful influence on the prevention and treatment of disease. They will admit afterwards the obvious propriety of retrospection; and not heedlessly, even by implication, assume that the present fairly represents the accumulated stock of past ages. They will learn, also, that, if in their upward travel to the source they are suddenly stopped short by the disappearance of the stream, they must not suppose they have reached the object of their search. They may have gone as far as their own language and its literature can guide them; but with a little perseverance and the aid of another tongue they can resume their course, and see new countries and rich and varied productions. It has happened, most unfortunately, that in attempts to trace to its beginnings the mighty stream of knowledge, attention has been distracted, and even farther travel arrested by odd constructions on its banks, and certain obscure inscriptions, or banners planted, — representing hypotheses, theories, and wild speculations, which professed to designate thereby the people on its borders, the productions of its soil and its mineral wealth. Opinions, like the sands of the desert, are ever shifting; but we must not be deterred, on this account, from a search after those immutable truths, ethical, scientific and natural, often buried under opinions; any more than we should desist from exploring the extent, details, and magnificence of an

Egyptian temple which has been partially covered by these sands. Extending the comparison; we are forced to acknowledge, also, that, with the unthrift of the poor Arabs in Egypt, who build their miserable huts on the walls and porticos of these partially buried temples, modern commentators and speculative writers have often planted their frail systems and hypotheses on the structure of some grand and once well-known truth; and thus, whilst marking its site, contrive still more to conceal and disfigure its real nature and proportions.

With the name of HIPPOCRATES are associated, in the minds of a majority of younger medical men, certain doctrines of crises and critical days, and obscurities of pathology, ignorance of anatomy and physiology, and a timid or inert practice for the cure of disease, with some aphorisms touching its progress and termination. But were the history of medicine as complete as the materials allow, this great man would be exhibited to every youthful student as the author of the first facts and carefully recorded observations of the phenomena of disease and its treatment in the acute stage; and of the influence of air, water and soil, or of climate and localities on the health and minds of man. He would be lauded for having set an example, which was soon and for a long time forgotten, of cautious philosophical reasoning, by which the inductions from the phenomena of other sciences were shown to be inapplicable to that of medicine: the former being governed by fixed laws;—the latter having for its subject an animated machine, the nature of which was ever varying. Hippocrates was not averse to philosophical theory; but he believed that the practice of the healing art must be based on the results of observations and experience. In theory, he invested a mighty power or general principle, which he called Nature, with the guidance of the functions and the restoration of their just balance—a doctrine substantially the same with that taught in recent times by Cullen. In practice, he recommended abstinence and diluents during the early stage of fevers,—and this, added to his sparing use of emetics and purgatives, furnished a standard, a recurrence to which at the present time constitutes the chief feature in the school of Broussais. When he advises bleeding in inflammation, and that the blood should be drawn as nearly as possible from the part affected, he is in accordance with the treatment in such cases resorted to at the present day, with a full knowledge of the circulation. His practice of bleeding in dropsies, neglected so long and then resumed, to be again forgotten, is the now prevalent and as we suppose correct one. As an acute and accurate observer of symptoms, he was deeply skilled in both diagnosis and prognosis. The book of Aphorisms, even in this respect alone, will ever remain a monument of his judgment and his genius. Accused of being timid in medical practice, he showed himself to be a bold surgeon, performing, with the exception of lithotomy, all kinds of operations with his own hand: We are told that he reduced dislocations and set fractures, extracted the fetus with the forceps, and used the trepan, not only in depression of the cranium, but also in cases of severe headache. Even in cases of hydrothorax and empyema, he was not deterred from the risks of operation. After ascertaining that fluid was present in the cavity of the chest, he made an incision between the ribs, allowed part of the matter or lymph to escape, and then introduced a tent, which he withdrew regularly once a day till the whole was evacuated. His use of the actual cautery, which was a favourite remedy with him, and the application of burning flax or dried mushrooms over the skin of the affected part, are traits of practice which at this day are thought to be bold, and in the hands of celebrated men original. Add to these his recourse to tents and issues, and we shall find, not merely

shadowed out, but specifically recommended and used, the main points of practice most approved of at this very time. And yet this great man, of whom all Greece was proud, to whom statues were erected, as to a divinity, whom Plato regarded as a master, and whose style was followed by Aristotle as the best of all models, who has had Galen for his commentator, and to whose original views on the influence which climate and living exerts over the moral and intellectual nature of man, both Montesquieu and Cabanis have been so largely indebted: this great man, we say, is only known to the mass of our profession by the casual mention, in an introductory discourse, of some of his insignificant hypotheses; or, perhaps, still worse, by his name being used in terms of slight—if not of ridicule.

Hippocrates claims our notice in another point of view. He is the chief of the Greek physicians and medical philosophers; and his name will designate an epoch to the student, in his inquiries into the regimen and course of exercises adopted in the gymnasia and at the games, in order to give the Grecian youth that strength of body, agility of movement, and graceful carriage which no plan of physical education in modern times has suitably accomplished. It would seem that these exercises were so methodized under suitable directors as to be made instrumental to the cure of various diseases.

In speaking, next, of the Alexandrian school under the Ptolemies, rendered celebrated by the names of HEROPHILUS and ERASISTRATUS, one cannot so much complain of the neglect of its practice and discoveries, as regret that a knowledge of these has only been preserved by the references and quotations respecting them found in subsequent writers. The student of anatomy is reminded of the name of Herophilus, whilst learning the structure of the brain, a part of which is still called after its first describer. He is not, however, so generally informed of the singular merits and discoveries of both Herophilus and Erasistratus, who first had an opportunity of practising the dissection of human subjects. The former pointed out the torcula, which still bears his name, and also the choroid plexus and the calamus scriptorius. He regarded the brain as the centre of the nervous system;—distinguished and named the duodenum, and gave a full, clear, and admirable description of the liver. He pointed out also vessels (the lacteals) in the mesentery containing milk; but his account is much less definite and exact than that of Erasistratus, who says, that it is only at particular times they are so found, being at others quite empty. This latter, also, taught that there were two classes of nerves,—one for sensation, and the other for motion. Erasistratus, in his medical practice, was mild; trusting principally to regimen and simples:—but as a surgeon, he was bold and decided. In schirrosities and tumours of the liver, he did not scruple to make an ample division of the integuments, and try applications to that viscus itself, which he described as a parenchymatous substance, principally formed of a congeries of veins. In cases of retention of urine, he made use of the particular catheter which long bore his name.

The surgeons of the Alexandrian school distinguished themselves by the nicety of their dressings and bandages, of which they invented a great variety. Lithotomy was practised by particular individuals, who devoted themselves exclusively to that operation. We learn that one of them, Ammonius, employed an instrument, by means of which he broke down stones in the bladder. A similar instrument has been found in one of the towns already mentioned, which was buried by volcanic eruptions nearly eighteen hundred years ago. In that great storehouse of antiquities, the museum at Portici, may be seen surgical instruments of every variety of make,

and for all kinds of operations, some of which were entirely lost to the world, and have been in later times reproduced as inventions.

Desiring more to invite retrospection than to give a connected historical sketch of ancient medicine, we shall omit any detail of the doctrines and practice of the Greek physicians, who, after ASCLEPIADES, flocked to Rome, and acquired for themselves reputation and fortune. The medical practitioner, who seeks popularity and a long list of patients in preference to a conscientious though somewhat rigid discharge of his duties, will find an exemplar in Asclepiades. Though this writer left fuller and more accurate histories of diseases than any of his predecessors, and increased the list of remedies by the introduction of cold bathing, yet he did not hesitate to indulge in quackery, when it seemed agreeable to the whim of his patients. Sea-sailing and carriage-rides were admirable remedies with him in cases of obstruction; and when physic was rejected as unpalatable, he prescribed declamation and dancing;—music, vocal and instrumental.

The methodic school acquired more celebrity by the illustrations and facts of CÆLIUS AURELIANUS, than by the efforts of its founder, THEMISON. The plan of the former was to trust for the identification of a disease to the development of the symptoms. His curative means were of the most simple kind. He followed Asclepiades in the division of diseases into acute and chronic. But we are under other and lasting obligations to Cælius Aurelianus, such as should inspire us with respect for every historian of science and art. Except for his commemorations, we should have lost all traces of many of his predecessors and contemporaries; and thus have been deprived of the original and valuable parts of their theories and practice, which were only preserved by incorporation with his own.

Among the few native Romans who obtained celebrity in medicine, and who have transmitted it to posterity, AURELIUS CORNELIUS CELSUS is entitled to the first notice and warmest commendation. Hopelessly ignorant as the world is of his personal history, so as even to be in doubt whether he ever practised medicine, it has received, in his eight books, *De Re Medica*, evidence of his learning, skilful arrangement and tasteful style, which from his own time to the present has won him universal praise;—we mean amongst all those who have earnestly and diligently sought for knowledge. But we grieve to say, that by no medical school or teacher in this country, as far as we have learned, are the careful perusal and study of Celsus recommended. In no university or institution for teaching the languages, with us, is this author, whose pure Latinity has ever been extolled, put into the hands of the student. He who has been called the Latin Hippocrates, for the quantity of his sound practical information, and the Cicero of physicians, for the elegance of his style; and who has left directions for the use of exercise and diet in the cure of indigestion, rivalling the best, at the present time, is not known, except by name, to a tithe, might we not say without injustice to one in a hundred, of our professional brethren. His *Materia Medica* is inert; but in his opinions of clinical medicine, taken from Hippocrates, with a little admixture from Asclepiades and Themison, we find many useful hints and some clear and applicable directions. His descriptions of fevers are sufficiently graphic and accurate to allow of the varieties being easily traced in practice—and the substance of his remarks on the Pulse is worthy of praise and remembrance. Of the eight books which he has written on medical matters, four are dedicated to surgery. In these latter a vast fund of information is to be found, not only gratifying to the curious, but instructive to the practitioner. We might specify his method of performing lithotomy; the operation for depressing

the cataract, and for making an artificial pupil; his rules for distinguishing fracture; and the application of the trepan. He was the first to remark that there may be rupture of a vessel within the cranium without fracture or depression. The whole of his account of injuries of the head is superior to many subsequent and more extensively received descriptions. He was fully aware of the power of suction to prevent the deleterious effects of poisoned wounds;—and he states that, provided the operator has no wound or ulcer in his mouth, he incurs no danger. In his seventh book, he acquaints us with the method of breaking the stone within the bladder.

To the esteem of the sincere and earnest inquirer after medical truth, who will not bind himself by the dogmas of any sect, Celsus has another claim, in the circumstance of his belonging to the pure eclectic school.

ARETÆUS was also of this school. To him we are indebted for descriptions of disease, divested of all theoretical assumption, and evidently bearing the impress of personal knowledge. Sensible of the importance of anatomy, as the only proper basis on which medical science can rest, he, like Celsus, prefaces his account of diseases by an anatomical description, not very accurate indeed, of the parts concerned. He is represented to be the first who made use of blisters. In acute diseases his favourite purgatives were elaterium and hellebore. Additional confidence in the merits of Aretæus has been inspired, in later times, by the enthusiastic admiration for him professed by Boerhaave, who has given a beautiful edition of his works.

Passing over names not without merit, we come to the celebrated GALEN, whose genius, erudition, and powers of philosophical combination left an impress on medical practice and opinions for more than thirteen hundred years after his own times. As it is of facts—actual discoveries and valuable observations of diseases that we discourse on this occasion, we shall not repeat what has been so often said of the labours of Galen as an enthusiastic commentator on Hippocrates, and author of numerous treatises on speculative questions in medicine. Of his real contributions to the science, a more copious notice and a distinct and respectful remembrance are due—more than is, we fear, generally accorded. The great physician of Pergamæ was both zealous in his study of comparative anatomy and diligent and successful in his dissections of the human subject. He availed of the opportunities offered to physicians in Rome, by their being permitted to dissect the bodies of foreign enemies and of culprits and exposed children, and of slaves. By these means and fortunate chances in his travels, Galen accumulated that vast assemblage of anatomical facts, which gives such value to his works, and of which Vesalius, one of the most learned anatomists of the sixteenth century, has spoken in terms of high and, at the same time, deserved commendation.

But in our admiration for the genius and attainments of Galen, we should not be slow to censure the misapplication of his powers and of his learning to the support of idle speculations and fanciful hypotheses; and his fondness for system often unsupported by and at direct variance with facts. His name should serve as a beacon to warn us against false philosophy, and mistaking subtleties of opinion and abstractions for things. One beautiful feature in his mind, which he displays in common with Hippocrates and the most illustrious names that have adorned our profession, is his piety. Amidst the darkness of paganism he breaks out into a burst of religious feeling, which would be worthy of a Christian sage of the present day. "In writing these books, (*de usu partium*,) I compose," he says, "a true and real hymn to that

awful Being who made us all; and in my opinion, true religion consists not so much in costly sacrifices and fragrant perfumes offered upon his altars, as in a thorough conviction impressed upon our own minds, and an endeavour to produce a similar impression upon the minds of others, of his unerring wisdom, his resistless power, and his all-diffusive goodness."

ORIBASIVS and ÆTIUS are entitled to consideration as historians of the art, and for having put on record many views and facts which would otherwise have been lost. The former was prompted to undertake this task by the Emperor Julian. The surgical writings of Ætius, who lived in the middle of the sixth century, are copious and valuable. His opinions were guided by experience, and his methods of management and cure are characterized by much caution and discrimination. He recommends and practised scarifications of the legs in anasarca; made free use both of the actual and potential cauteries; cut out hæmorrhoidal tumours; operated for aneurism; tried to dissolve urinary calculi by the administration of internal remedies; and has given a series of interesting chapters on inflammation of the intestines followed by abscess; on encysted tumours; on the varieties of hernia; on pricks of the nerves and tendons; and, in fact, on almost every important branch of surgical knowledge, if we except the reduction of fractures and luxations. In explanation of his silence on this latter subject, it has been plausibly suggested, that, in all likelihood, quacks were at that time in possession of this branch of practice. There were *natural bone-setters* then as now.

ALEXANDER TRALLIANUS, called a follower of Galen, has left a reputation behind him, for accurate description of disease, and philosophical attention to all the modifying circumstances of age, climate, sex, and constitution, which place him in advance of his master as a valuable contributor to the science of medicine. His extended fame never lessened his great modesty nor the extreme amableness of his disposition. In him were combined learning, industry, experience, refined perception, accurate judgment, and high moral feeling. At this day we must prize his admirable observations on the moral treatment of melancholy madness, which he enriched with some very interesting cases. On the subject of blood-letting, he differed from all the other physicians of the day, by contending that the numerous communications of the sanguiferous system rendered it of no moment, in the generality of cases, in what part of the body a vein was opened. He has pointed out with great accuracy the distinction between the symptoms of pleurisy and inflammation of the liver—the seat, varieties, and management of dysentery,—and the regimen most proper to be adhered to in each of almost all the diseases of which he has given a description. In a separate treatise on intestinal worms, which he divided into ascarides, lumbrici, and teniæ, he has pointed out with admirable accuracy the distinguishing symptoms of each, together with the methods of cure, which are little different from those at present commonly had recourse to.

The last of the Greek, or Greco-Alexandrian school, worthy of notice, is PAULUS ÆGINETA. His contributions to surgery were large and valuable; so much so, indeed, that he has been preferred by some to all the more ancient writers, scarcely excepting Celsus. We feel, moreover, in reading his histories, that they are stamped with his own practice and experience. He had, again and again, performed most of the operations he has described; and his Sixth Book has been considered by many, and not without reason, as the best body of surgical knowledge, previous to the revival of letters. Among the distinguishing peculiarities of his surgery may be mentioned laryngotomy, and excision of the mamma. His method



of performing the latter was by a crucial incision. But the most striking characteristic of Paulus Ægineta as a practitioner, was his practice in midwifery. Few of his instructions in this art are, it must be confessed, worthy of mention and imitation. His recommendation to reduce all other presentations to those of the head and feet, which he deemed equally natural, was, however, an important step in the progress of midwifery. To Paulus we owe, also, the proposal of embryotomy, when the volume of the head is too large for transit through the natural passage; having first ascertained that life is extinct in the child. His caution against undue force in extracting the placenta, for fear, among other bad effects, of partial inversion of the uterus, is now one of the first and least disputed maxims in the obstetric art. He has given, also, a full and accurate account of inflammation of the uterus.

A mention of the Arabian physicians suggests the ideas of astrological medicine, and of a pharmacy more enriched with mineral preparations than that of the Greek school. Much of what they have written might, without any great loss to medical science, be expunged. But it is equally clear, that a better knowledge of their precepts and practice in certain diseases would have saved lives without number, in both Europe and America, since their time. Our reference is here more especially to eruptive fevers, and notably to small-pox and measles—though the same principles will govern in that large class of fevers marked by critical evacuations from, or determination to the skin. Rhazes, who was born about the middle of the ninth century, enjoyed the highest reputation among his countrymen for his extensive and varied knowledge, not only in medicine but in all the sciences. To him we are indebted for a short but admirable treatise on the method of treating small-pox and measles, more particularly the former, which we do not hesitate to declare as among the best extant. The credit given to Sydenham for introducing the cooling regimen in fevers and acute eruptive diseases ought, with still greater reason, both on account of long priority and distinctness of direction, to be awarded to the Arabian physician. In his prophylaxis, and in the treatment on the inception of small-pox, and at its increment and decline, Rhazes is, to our mind, a clearer and safer guide than any with whom we are acquainted. These impressions, produced after a perusal of the work during the prevalence of the disease, and at a time when we had charge of a small-pox hospital, are confirmed by another reading since we began this brief notice of the Arabian school.

Rhazes lays down the mode of prevention, or of diminishing its violence if it does come on, in persons exposed to the contagion, during the season when the disease prevails. He recommends, with this view, venesection for adults, and topical bleeding, by cups, for children; water cooled with snow for drink, and also acidulated barley water. The food to consist of the lighter meats, lentils and saccharine fruits; with abstinence from wine, the more stimulating kinds of flesh, condiments and spices. Cool bathing is allowed, but the warm bath is prohibited, as are fatigue, venereal indulgences, and exercising in the sun. The bowels are to be kept open by simple means, as the juice of prunes and sugar, or whey and sugar. Some prescriptions are given for this period, composed chiefly of vegetable acid, sugar and camphor.

When the preliminary fever of small-pox has set in, accompanied by a tumid abdomen, pains in the back and head, redness of the eyes and face, laboured respiration and a full pulse, with red and turbid urine, and acrid heat of the surface, blood-letting is recommended to the extent of producing even fainting. Symptoms of less intensity are to be met by a more sparing venesection. After this, the acid and

acido-saccharine and acerb drinks, before advised, are to be used. Water made cold by snow is also to be freely and repeatedly drunk; and if it, in conjunction with the preceding remedies, fail to abate the feverish heat, the stomach may be emptied of its watery contents and fresh fluid given. The occurrence of sweating or free urination is a good sign after these aqueous potations. The secretions not taking place, the use of the water is to be suspended, and the acid and acerb drinks, before mentioned, are to be resumed. Agitation and functional disturbance still persisting, the eruption of the small-pox may be considered as imminent, and another kind of treatment is required.

The practice recommended in the next or eruptive stage contrasts most advantageously with the murderous alexipharmic and cardiac method so long and even still followed;—and exhibits a skilful observation of the means of maintaining the requisite balance between the internal and external surfaces, the parts chiefly affected, which even modern pathology sometimes fails to indicate to its followers. The advantages of a free cutaneous eruption being admitted by Rhazes, he does not attempt to procure it by the administration of powerful stimuli to an organ, the stomach, already highly irritated and injected, and suffering from intense heat and thirst. The way in which he endeavours to provoke sweat, is by frequently administering cold water in small quantities as a drink; and by friction of the surface, and wrapping the body in a double shirt, and then subjecting it, with the exception of the head, to the vapour from hot water. He reprobates hot and dry vapour baths, on account of their overheating and enfeebling. The moisture of the vapour which arises from the water and rests on the surface, is to be rubbed off as soon as formed, and before it cools. The eruption visible, acid and cooling drinks and regimen are to be used: but if the eruption is slow in appearing, and there be much inward distress, and oppression and palpitation of the heart, then should the external means just mentioned be had recourse to, and warm water, either alone or with fennel and smallage seeds infused, to be taken as a drink. Occasionally a decoction of raisins and figs with that of some aromatic seed is recommended.

Directions are given for relieving, by various topical applications, the throat, eyes and nostrils, which suffer from the eruption of small-pox. Cooling and acid gargles, or even, if nothing else be at hand, cold water is advised for the throat, from the beginning. Hoarseness, tightness in breathing, and pain in the throat, are to be met, if the strength will bear it, by blood-letting from the arm. Applications of a soothing kind are, also, suggested for the limbs, if the irritation in them be great from the eruption. Some of the directions for this purpose, as well as for ripening and drying the pustules, may be thought to show unnecessary refinement in practice; but as a means of allaying pain and irritation they are entitled to notice. On the score of avoiding, if possible, disfiguration from the disease, the two short chapters on *taking away the dry scabs and eschars, and on destroying the marks of the small-pox*, will also engage the attention of the reader.

After these follow the chapter on the diet of patients in the disease. Barley water, prepared in the same manner and with the same art as for those “in acute and hot diseases,” is the first article,—sweetened, if the bowels be costive and the fever be moderate; but if the heat and fever be intense, and the bowels loose, the juice of acid pomegranates, together with their seeds pounded, is to be substituted for the sugar. If the patient be restless and cannot sleep, a proportion of poppy is to be added to the barley water. Should the body be very loose, we are to add to this last mentioned drink one part of the dry seeds of acid pomegranates and one part

of poppy. As a still stronger astringent, the meal of peeled barley and the meal of pomegranate seeds are to be made into a decoction, and drunk either alone or with sugar. Animal food is prohibited "until the pulse and breath have returned to their natural state."

In another chapter are given the rules for regulating the discharges from the bowels in small-pox. Bleeding having failed to remove the tension or morbid excitement of the parts, and the body being still full and bloated; or heat and pain of the head complained of, the bowels are to be opened. If there be looseness, we are told not to give any thing to increase it; nor are we advised to check it by active astringents. The chief remedies are, first—barley water, then draughts of infusion of red roses, sorrel seed, sumach, and berberries; gum Arabic and poppy rinds. Should dysentery appear, its treatment is to be on the same principles which govern us where it occurs under other circumstances.

The treatise is concluded by a chapter on the prognosis, in which the curable and incurable varieties of the disease are pointed out.\*

We have now given a synopsis of the Treatise of Rhazes on the Small Pox, omitting, in order to avoid confusion, what the author says of measles. There are some pathological notions in it which no physician would now entertain;—and, perhaps, an unnecessary admixture of various substances in some of the prescriptions; but the true nature of the malady is not obscured by the former, nor its essential treatment enfeebled by the latter. We do not believe that all the therapeutical refinements of the present day, and the vast contributions of pharmacy combined, have given us a rule of practice and means of cure more advantageous to the person afflicted with small-pox than we obtain from the enlightened experience of the Arabian physician. If this opinion be tenable, and we have furnished the data on which it is formed, the reader will see one clear proof of the benefit of retrospection in medicine. His attention once directed in this quarter, he will continue to explore, and, whilst doing so, to discover treasures, which, although concealed under much useless matter and trifling tinsel, are, when obtained, not the less worthy of admiration to the zealous and conscientious inquirer after truth. In the very errors of the past he will obtain a lesson for his guidance at the present; and he will be the better enabled to elevate and secure landmarks against bewilderment and vexation for the future.

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## CLINICAL MEDICINE.

BOERHAAVE WAS, we are told, the first to recognize clinical medicine as a distinct branch of professional instruction, and to give lectures on the subject. Its importance has been always admitted; since it consists in observing, studying, and prescribing for a sick person by the bed-side;—and is, of course, coëval with, or rather constitutes, the practice of physic. Being an inquiry into the previous history, and

\* In this brief notice, we have availed of the translation of the treatise of Rhazes by Dr. Richard Mead, which is published with the works of the latter, in one volume.

an observation of the actual symptoms, of the patient before him, and of the effects of remedies, every historian of disease, from the time of Hippocrates down to the present day, must be regarded in the light of a writer on clinical medicine. It is, indeed, in this respect, that we derive so much valuable information from the past. Diseases exhibit the same characteristic features, in the countenance, attitudes, and other external symptoms, now as when described by Hippocrates and Celsus. Symptoms still, as before, mark the deviations from health, and represent the sufferings of the organ or organs. Their value has not; it must be confessed, remained constantly the same. They have been at different times supposed to have a double meaning: first, as indicating an organ altered in its function; and secondly, some abstract or mystical idea,—disturbance of the animal spirits, or fermentation of the blood, or derangements of the vital principle, which kept up the morbid state of the organ, and by censure or sympathy, a troubled state of the entire animal economy. But, as fidelity of description must always be more prized than ingenuity of application, we can readily choose to receive the former, and attend to, neglect, or forget the latter, as probabilities, fashion, or early impressions may incline us. Symptoms carefully recorded by the bed-side allow of being grouped, and thus they portray the disease with as much distinctness as the lines and colours of the painter portray the likeness of the sick man himself. Physiognomists and phrenologists may speculate on the meaning of each separate feature of his face, and declare him to be mild, good and intelligent, or capacious and stupid,—with more or less success; but so long as the portrait is preserved we know what the man was like. So in regard to symptoms: they have been supposed by some physicians to represent occult qualities and changes, and to have a mystical meaning; but if they have been faithfully described, we recognize them immediately when we see them reproduced; and we feel sure that we are now looking, for example, at an expression of countenance, and a body in certain attitudes, similar to what Hippocrates and Celsus, Sydenham and Huxham, had long before contemplated. It is this reproduction, or reappearance of the original, which enables us to recognize the correctness of the picture drawn centuries before our own time. Varieties in the style of narration among different observers no more impair their accuracy than the various styles of colouring do the correctness of the portrait. Titian and Rembrandt, Vandyke and Sully, have each his manner in this respect; and yet each has copied with fidelity his original. Even the peculiarity, amounting to quaintness and occasional involvement short of obscurity, ought not to detract from the value of a historian of disease; since these qualities are found, sometimes, to give additional piquancy to the narrative of the general historian of empires and their changes.

But after all; by whatever argument and illustration we may advocate the study of writers on clinical medicine, and show that from their pages much instructive and available knowledge, to guide us in the treatment of the sick, can be obtained, it must be equally clear, that, without opportunities of personal observation by the bed-side, we cannot either well understand nor fully apply the observations, directions and cautions of our predecessors. We must not only use, but train, our senses and intellect into the habit of patient attention, and learn to guard against the illusion of the former, and too hasty deductions by the latter. A preliminary acquaintance with the natural mechanism and healthy function of the human body, whose deviations from these states we propose to notice, is of course indispensable.

If we know not the standard of health, how can we measure the deviations from it which should designate disease? This is almost a self-evident proposition, and for repeating which an apology would be due to the reader, were it not a matter of every-day observation, that hundreds, professing to pursue a regular course of study, hurry on at once to an investigation of morbid phenomena, and engage with ardour in disquisitions respecting their causes and seat, and the changes in structure by which they are accompanied, without the smallest preliminary knowledge of healthy organization and function. It is impossible for the most skilful and conscientious teacher of clinical medicine to put students, thus ignorant, in the proper path for accurate and independent observation of the phenomena of disease. They may learn to group symptoms, and to apply their information thus obtained after a *nosological* fashion; but for a due appreciation of the true changes, probable result, and indications for cure, they must be incompetent.

On the other hand, if furnished with a clear, even though it be elementary knowledge of the healthy standard of structure and function, and of the natural, common, and hygienic modifiers of the animal economy, a student may sit down at the bedside of the patient and begin at once his course of clinical medicine. Reading and observation will go on advantageously together; and with a few books and a few patients, ample time being taken, and full attention given, he can qualify himself for declaring a correct diagnosis, and not be entirely at a loss in prognosis. This branch of study can be prosecuted far from hospitals and colleges, and crowded cities and celebrated teachers. The greater the number of patients, the better will be the opportunity for witnessing the living pictures of disease in its diversified aspects. But we must remember, that opportunity is not realization; and that he who gives himself up to a careful and continued study, throughout the whole course of their disease, to six patients, will derive more solid information, and be better preparing himself for the practice of his profession, than another would do, who passes by the beds, and makes some casual inquiries, or hears some broken sentences from a teacher respecting the cases of six hundred sick, in the most celebrated clinical school in the world. We listen with a feeling of mirth, if not of contempt, to the recital of a traveller whose chief boast is the number of miles which he has traversed in a short period, and the many countries he has run through, he admitting, the while, that he has no distinct recollection of any object of nature or art, nor knowledge of the people in any one of the lands which he visited. Is not the same kind of folly committed by a congregation of students, who twice a week run through the wards of a hospital, seeing little, and hearing still less, and who afterwards persuade themselves, or are persuaded, that clinical medicine is included among the branches in which they have been instructed and have even showed some proficiency? To the chief object, that to which diagnosis ought essentially to tend, and for which prognosis is useful, the treatment of the disease, these juvenile racers, and we are afraid we may say some of their senior leaders, must remain in a great degree strangers—under the system of haste, crowding and impatience, so commonly exhibited in all large hospitals, in all cities and in all countries. We hope that the extensive, and we sincerely believe correct, application of our stricture, will prevent any set of teachers from supposing that we had them in our mind when writing this article.

To illustrate the better our meaning, and to show the extent of the evil, we shall quote the language of Dr. Latham, an eminent teacher of clinical medicine in London, who has just favoured the world with his Lectures on this branch.

"I have always thought that hospitals are not converted to half the good they are calculated to serve as schools of medicine; and I think so still.

"I have always thought that, in hospitals, knowledge is perpetually running to waste for want of labourers to gather it; and I think so still.

"I have always thought that, in our schools, every mode of lecturing has been unduly exalted above clinical lecturing; and every place where knowledge is to be had, or is supposed to be had, has been unduly preferred to the bed-side; and I continue to think thus.

"With respect to clinical lecturing itself, custom has robbed it of its peculiar character, and, withal, of half its advantages and half its popularity. It has been separated too much from the wards and the bed-side, and has deviated into a discussion of abstract pathology and therapeutics. There may, indeed, be things which can be discussed with convenience and propriety only apart from the patient; and so let them be: but these bear a small proportion to the multitude of things which can only be learnt at his bed-side, and in his very presence.

"Here is a hospital containing 500 patients—a wonderful spectacle! Hither resort hundreds of students from every part of the Empire. Here they see what the majority will never see again, after the period of their pupilage is over. They see collected in one place every variety of disease, and every variety of injury, and numerous specimens of each. What an opportunity of instruction gained, if rightly used; what an opportunity lost, if neglected!

"And which is generally the case? Is the opportunity, in fact, generally used or neglected? I speak from my own certain conviction, and I answer, that it is generally neglected. I know that five out of six of those who profess to attend the medical practice of this hospital (and it is the same at other hospitals) never watch a single case of disease through its entire course, during the whole period of their pupilage. I say this with great sorrow, and as a warning to those whose pupilage has yet to begin. This is what I mean by the materials of knowledge running to waste."

If we can suppose a more favourable state of things—in the teacher allowing himself full time to make the necessary inquiries and examinations, and in the students patiently watching and listening to what transpires on the occasion, the result must necessarily be beneficial to the parties just mentioned, as well as to a third party, for whose benefit and to ameliorate whose sufferings and save their lives the task has been undertaken at all. We refer, of course, to the sick themselves. Even amidst all the inconveniences and impediments which have attended the prosecution of clinical medicine, and, we should add, surgical, also, many and great additions have been made to our sum of practical knowledge. Symptoms, we have already said, appear in the same order, or grouping and succession, now as in the olden time:—they are representatives of precisely the same internal changes of structure and derangement of function as heretofore. In their indications of the intensity of disease, and its favourable or fatal issue, they have the same meaning now as ever: but as guides to the cure, they have a different signification. We are now enabled, by carrying out the history of the case so as to include an account of the changes in structure of an organ or tissue, if the result have been fatal, to enlarge greatly, and, at any rate, to give more precision to, our semeiology. We can, with more confidence than before, declare, not only that certain symptoms indicate disease, but also the altered mechanism of an organ on which the disease depends. The seat of the malady known, we have it more in our power to direct remedies to the part affected, or, at any rate, to withhold what we are assured would be inefficient if not injurious. The symptoms in the advanced stage of fevers, in which the senses and mind are disturbed, and there is irregular action of the muscular system, are no longer attributed to debility, nor to a particular state of the blood, but are shown to depend on an alteration in the brain or spinal marrow, or both, or in their investing membranes. A crowd of abnormal sensations and troublesome disorders of various organs are now known, by a greater attention to physiological phenomena, to be dependent on the state of the stomach and intestines, and



are treated accordingly. The ear enlisted, as the eye, touch and smell had been before, opens to us an acquaintance, by means of auscultation and percussion, with the structural changes and derangements of function of the heart and lungs. Morbid conditions of the brain and spinal marrow of a sub-acute and chronic character, are indicated, in their inception, by symptoms, which, formerly, were either unnoticed or were supposed to be evidence of other affections. More accurate knowledge of the functions of the several parts of the nervous system has greatly enlarged our diagnosis of the diseases consisting in either disturbance or abolition of sensation or of motion, in different organs and regions. That physicians and surgeons are not, however, exempt from errors of diagnosis, even with all the lights of modern pathology, is proved by the following, among other cases, related in an Introductory Lecture of Dr. Marshall Hall:—

“You see this drawing of the exterior part of the abdomen: here are the marks of a seton; here are the marks of cuppings, and here those of leeches: they are absolutely unaccountable! What was the disease in this case, think you? Why, there was no disease at all! Yet it was proposed by one surgeon, and it was pretended to be the wish of the patient, to extirpate the ovary! In a similar case at Edinburgh, the abdomen was actually laid open, but no ovarian disease existed!! Now, what is the meaning of all this? In the case represented here it was a *fictional disease*. The patient was a malingerer in the hospitals, and deceived many hospital physicians. In the other case, the surgeon deceived himself.”

Not many years ago it was proposed, as we heard at the time, by more than one experienced surgeon and physician of this city, to tap a woman who was supposed to have ascites; but who, as it turned out in the sequel, was only pregnant, and who was in due time delivered of a well-formed and living child. The employment of the stethoscope would have prevented the erroneous opinion in this case.

In order to arrive at a correct diagnosis of the disease, respecting the nature and cure of which his advice and assistance are required, a physician cannot follow a better course than that indicated by Dr. Latham, in the work already mentioned. It is thus expressed:—

“The patient being placed before me, I ask him no question until I have learnt every thing worthy of remark which my own eyes can inform me of. His physiognomy; his complexion, whether florid, pale, or dusky; the general bulk of his body, whether large and full, or spare and wasted; the condition of particular regions, whether swelled or attenuated; and of the surface, whether there be any eruptions or sores upon it, and what is their character; and, lastly, the power of locomotion, whether he have free use of his limbs or not.

“All these are most important particulars, and we ought to make much of them. There can be no doubt concerning them; they are objects of our own observation, and come to us authenticated by the testimony of our own senses. One step securely ascertained leads to another; and from what we see upon the exterior, we obtain a clue for directing our inquiry to the seat and centre of the disease within. If locomotion be hindered, we look well to the brain and spinal marrow; if there be the livid lip and dusky skin, we scrutinize particularly the condition of the heart and lungs; if the whole body, or some of its parts, be attenuated, we examine well the organs of nutrition.

“Having thus learnt all I can with my own eyes, and felt the pulse and seen the tongue, I next proceed, in taking the case, to that further inquiry in which the patient takes a part: and, first, I ask him concerning his general sensations, especially whether he be hot or cold; and I endeavour to learn whether his heat and cold occur under conditions which constitute fever.

“Next, I inquire into the state of particular organs; and, beginning with the head, I ask after pain, vertigo, and sense of weight, the sight and the hearing, and sleep and wakefulness. Many of these things are only glanced at, or perhaps passed over altogether, if there be no reason to suspect disease of the brain.

“Then, passing to the chest and respiratory organs, I ask concerning pain and cough

and expectoration, and the state of the breathing under various conditions of exertion and in different postures of the body; and I learn the force and extent of the heart's pulsation.

"These things are hardly dwelt upon, or soon despatched, if there be no suspicion of disease in the chest; but if there be, not all we can learn by simple inquiry is enough to ascertain its nature. The patient must, moreover, be submitted to the process of auscultation. This process, however, in order to avoid interruption, I postpone until other inquiries are finished.

"Lastly, proceeding to the abdomen, I ask here also concerning pain and uncomfortable sensations, the appetite, the digestion, and the evacuations, their frequency, quantity, and appearance; and then I ascertain with my hand its form and fulness, the possible enlargement of particular viscera, the effusion of fluid, or the existence of pain upon pressure.

"Here the examination of the patient ceases, as to his actual condition; but the history of his complaint remains to be learnt, its origin and its progress hitherto, and its probable exciting cause."

In the therapeutical part of clinical medicine there is more precision, if not more success, now than in former times. Here again, whilst referring to the older writers, we must distinguish between the benefits from the treatment and the indications which were supposed to direct its adoption. The latter may be, and indeed often have been, shown to be erroneous, sometimes absurd; but yet, the former is occasionally good, and is sustained by the pathological doctrines of the present day. We may take blood-letting, for instance, in dropsy, typhus fever, and small-pox, which, early had recourse to, and then abandoned, in both instances from hypothetical and wrong premises, is now, once again, practised, for reasons different from those which formerly influenced either its friends or opponents. The data up to the present time for forming a sure therapeutical system, are far from being so numerous and so fixed as to authorize us to refuse our attention to the empirical experience of those who have long preceded us, by which they argued in favour of a practice if it removed a group of symptoms and abated the disease. Their facts may have been badly linked together:—we may even refuse to see any bond of union between them;—but, as they constitute a series, they must command attention if they do not force us to imitation. Clinical medicine, as practised and taught during the last century in the hospitals of Europe, has contributed greatly to simplify therapeutics, by showing the inertness and uselessness of a vast number of articles of the *materia medica*, which, separately or, still more, combined, were thought to be so efficacious in various diseases, and in particular stages of a disease. It has, also, contributed to the same end, by availing of the aid of pharmacy and pharmaceutical chemistry, and of verifying the powers and effects of the separate and peculiar principles furnished by this latter.

We shall hardly be expected to direct the attention of the student of clinical medicine to the importance of *Materia Medica* and Chemistry, in order to aid him in adopting and carrying out his therapeutical indications. The proposition must be too evident to require enforcement.

Whether the student be a resident of the country and visit, with his preceptor, a few patients; or inhabit a city, and follow the professor through the crowded wards of a hospital, the same object must be held steadily in view, and be reached by the same means. The one kind is preparatory, and consists in at least an elementary knowledge of—1, anatomy, or of healthy structure and natural connexion of parts, in order that he should be able to detect morbid structure and displacement of parts; 2, of physiology, or of the healthy function of each organ, and the sympathy among the whole, so that he may be able to appreciate the derangement of function and want of consensus, constituting the symptoms; 3, of therapeutics, to direct him in

the selection, the dose, and the time of administration, and the combination, of medicines, and respecting all agencies capable of modifying and restraining morbid action. The second, or direct means, are devotedness to the case before him, careful and attentive and unbiassed observation of its phenomena, and fidelity of record of the causes of the disease, and of the changes brought about by treatment, or otherwise occurring. But during all this time, whether of preparatory study, or of application to clinical medicine, enlightened youth, they who have ambition beyond the mere dabbler in science, or trader in its practice, will remember that the ultimate object of their study is not a license or diploma, but to render themselves valuable to society. It has been well said by a distinguished London lecturer, (Mr. Travers,) in an address to his class, that, in these days of artifice and delusion, there is no course left to high-minded men, in their unavoidable competition with pretenders, "but to render their superiority of knowledge a mark, a beacon of distinction by which they shall be known." If these views be deemed correct, as they unquestionably are, it is the bounden duty not only of every teacher of clinical medicine, but of every medical preceptor, to act up to them by suitable exhortation, encouragement, and example to his pupil.

Various impediments to clinical instruction, some of them resting with the profession, others interposed causelessly and ignorantly by the directors of hospitals and the prejudices and ignorance of the community, demand our notice, and will be examined in future numbers of the Journal. In the discharge of this duty, we would invoke the assistance of our professional brethren throughout the United States, without reference to city or school; as we have no intention to make a personal or partial application of the strictures which may perchance be called for.

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## PATHOLOGY AND THERAPEUTICS.

### ACUTE RHEUMATISM.

M. BOUILLAUD, in a recent work on the subject,\* announces, as a discovery worthy of note, the almost constant coincidence with acute articular rheumatism of inflammation of the lining membrane of the heart (*endocarditis*), or pericarditis, or of both conjoined—*endo-pericarditis*. The fact must, we should think, have struck every practitioner who has been called upon to treat acute rheumatism. For ourselves, the announcement of M. Bouillaud does not entirely strike us as new; though we assuredly believe it to be true. The error, hitherto, would seem to be, in supposing the affection of the heart a metastasis, in place of regarding it, as it really is, a part of the primary disease, in which a tissue, the fibro-serous, of the same nature as that surrounding and entering into the articulations, is the seat of an inflammation, or irritation, if you will, similar to that under which the latter suffer. The true seat of articular rheumatism, according to this author, is in the synovial membranes; the ligaments and parts external to the joints being only secondarily affected. Cases can be readily furnished in proof of this position. In

\* *Nouvelles Recherches sur le Rheumatisme Articulaire aigu en general, et specialement sur la loi de coincidence de la Pericardite et de l'Endocardite avec cette Maladie, ainsi que sur l'Efficacite de la Formule des Emissions Sanguines Coup sur Coup dans son Traitement.*—Paris, 1836.

some of the fatal ones the synovial membrane has been found covered with coagulable lymph.

The cure, says M. Bouillaud, whose precise language we do not give, believing it to be misleading, if not extravagant, consists in the antiphlogistic treatment, and, above all, blood-letting. The following is the formula which he thinks necessary to be followed, in order to give effect to his treatment.

"The patient, on the evening of his admission into hospital (provided he be strong, and have a good constitution), is bled to 16 ounces. From very plethoric patients 20 to 24 ounces are sometimes taken; but 16 ounces is the common dose.

"Second day.—Two bleedings from the arm of from 12 to 16 ounces each, and in the interval between them, leeching or cupping (the latter by preference) to the extent of 12, 16, or 20 ounces. The cupping-glasses are applied around the affected joints, or to the præcordial region, if, as generally happens, the heart is implicated.

"Third day.—One bleeding from the arm, and the abstraction of 12 to 16 ounces of blood by cupping from the joints, or from the region of the heart.

"Fourth day.—The fever, pains, swelling, &c. have sometimes completely subsided by this day, in which case the further abstraction of blood is not practised; but should they still exist, the patient is once more to be bled to the extent of 12 or 16 ounces.

"Fifth day.—Generally speaking the disease, by the fifth day, is in full progress towards resolution. Sometimes, however, the fever may still continue well marked, and in that case venesection to 12 ounces, or cupping to the extent formerly stated, becomes advisable.

"From the sixth, seventh, or eighth day, the patient convalesces rapidly, and he may now begin to take food.

"Should a relapse take place (which will sometimes happen, though not perhaps so often as after the common method of treatment), bleeding may be again necessary. Thus, in a case in which the disease had been cut short by four bleedings, the patient relapsed, and before recovery took place, it was found necessary to bleed him again five times.

"Slight relapses may be treated by emollients, abstinences, baths, anodynes, &c.; the disease wearing itself out in a few days.

"To escape relapses it is of paramount importance that patients guard most carefully against the slightest breath of cold."

Of the propriety of carefully guarding against the patient's being exposed to the slightest draft of air, there can be but one opinion. The auxiliaries to the above plan resorted to by M. Bouillaud, are abstinence, demulcent drinks, blisters, the application of compresses smeared with mercurial cerate, and so arranged as best to favour resolution, emollient cataplasms, baths, opium in moderate doses, and exhibited either internally or by the endermic method. Our own experience is adverse to the use of opium until some control has been excited over the disease by copious blood-letting.

#### DIFFERENCE BETWEEN ACUTE AND CHRONIC RHEUMATISM.

Discoveries run in a circle. We find it stated in the April No. of the *Médeco-Chirurgical*, that there is a curious coincidence in the views of two physicians respecting rheumatism,—implying that there rests the merit of originality between them,—Dr. Johnson, of London, and M. Parise, of France. They endeavour to separate acute from chronic rheumatism;—considering the former as *arthritis*, the latter, as a peculiar affection, probably neuralgic, of the investing sheaths of the muscular fibres, or perhaps of the neurilema of the nerves themselves. That there is no great novelty on this latter view, we well know, since we have been for some years past in the habit of advancing a similar opinion to our class, when lecturing on the tissues as well as on pathology, without laying claim to any merit for discovery. The other point, on which Dr. Johnson differs from M. Parise, in the former maintaining that acute rheumatism is closely allied in its nature to *gout*, affecting usually the same parts, and very often

not to be distinguished from the latter disease, was many years ago advocated and enforced, with much plausible and ingenious illustration by Dr. Benjamin Rush.

*Connexion between Hypertrophy of the Heart and Apoplexy.*—The influence exercised over the brain by the heart, especially the left ventricle, is very great. Cases illustrative of this position, and the therapeutical views deduced from it, have been given, within a relatively short period, by Lallemand, Broussais, Andral, &c.; but in more fulness by M.M. Bricheteau, and Bouillaud, and Dr. Hope. Twenty-two cases of apoplexy, in all of which hypertrophy of the left ventricle of the heart existed to a greater or less degree, are narrated by M. Bricheteau. Among these is General Foy, the able and eloquent speaker, and one of the liberal leaders in the French Chamber of Deputies. From childhood he had been subject to palpitations of the heart. In 1817, when not quite forty years of age, he was threatened with apoplexy. This, as well as some subsequent attacks, were speedily relieved by copious venesection and other depletory measures, prescribed by Dr. Gall. The General was afterwards under the professional care of M. Broussais, who had known him in Italy, and who, aware that his patient had a tendency to heart disease, regulated his treatment accordingly, with great benefit to his general health. In 1823, he experienced an attack of enteritis and nephritis, and at this period the hypertrophy of the heart seemed to be much aggravated. In 1825, he fell down insensible in the street, but was soon recovered. In the November of this year, the cardiac disease proved fatal. There was found on dissection effusion to a considerable extent in the cavities of the pleura, and also within the pericardium. The heart was enormously enlarged in volume, and the walls of the left ventricle in particular were much increased in thickness. The head was not examined.

M. Bouillaud found, that, out of fifty-four cases of hypertrophy of the heart, there were eleven in which cerebral disease, in six apoplexy, and in five ramollissement or softening of the substance of the brain, was found on dissection. Dr. Hope, in a paper read (1835) before the College of Physicians, on the connexion of apoplexy and palsy with organic diseases of the heart, relates, that out of thirty-nine cases of apoplexy, disease of the heart was found coëxistent in twenty-eight.

According to his data, the author concludes that the periods of life at which fatal apoplexy is most prevalent, are those in which disease of the heart (either hypertrophy of the muscular substance, or ossification of the valves and vessels) is of most frequent occurrence—namely, between forty and fifty, and between seventy and eighty. In some cases the existence of diseased and enlarged heart was not suspected. The deductions for practical guidance are clear—viz. avoidance of all severe bodily exercise, and all exciting emotions of the mind. And, as pointed out by M. Bricheteau, we should direct the occasional application of leeches over the region of the heart, instead of to the temples, or any other part of the head, the internal use of digitalis, hydriodate of potassa, and other diuretics.\*

#### FRONTAL NEURALGIA, THIRTY-TWO CASES OF.

DR. RENNES has published, in the *Archives Generales* for June, some observations and reflections on thirty-two cases of frontal neuralgia, collected in the course of fifteen months, in private practice. The number, as Dr. Rennes properly remarks, is remarkably large; being thirty-two of neuralgia, out of four hundred of other diseases, or one to fifteen—in a rural district, (Bergerac.) Atmos-

\* Johnsons' Medico-Chirurgical Review.

pherical vicissitudes and anomalies in the seasons, will, Dr. R. thinks, go far to explain the almost epidemic prevalence of the disease in question. Winter furnished the larger number, autumn and spring next; and summer the fewest. The medical constitution seemed to partake, during the whole of the period already mentioned, of a neuropathic character. Rheumatic pains were very common, and sometimes terminated in a well defined neuralgia. Facial neuralgia was seen to succeed gastralgia, and to alternate with sciatica. Sanguineous and nervous temperaments most predisposed to the disease, which in regard to age takes a wide range, being most frequent, however, in subjects between twenty and thirty-five years old. It seemed to Dr. R. to rarely depend on gastric disturbance; and he did not use, nor when used, did he derive much benefit from evacuates of the alimentary canal. Blood-letting was more commonly indicated, and was more evidently beneficial. He often had recourse to this remedy on the invasion of the disease, but it never cured even the persons who were relieved by it. The nervous element, as Dr. Rennes expresses himself, was too predominant. Two out of three cases were of females; and the greater number who invoked his assistance, were in a state of single-blessedness. Some of his younger female patients menstruated irregularly, and some were decidedly chlorotic. In one case, on the other hand, of a young lady, the neuralgia, which had preceded excessive menstrual discharge, causing anemia, was relieved after this latter. All classes of society, and all callings, seemed liable to the disease; although the poor were attacked in greater number. Of the house servants, cooks were the greatest sufferers.

Slightly noticing the symptomatology, which to the author exhibited nothing new, it is sufficient to say that the neuralgia was periodical in its attacks; returning each day at nearly the same hour; more commonly in the morning than in the evening. The type was always quotidian or double tertian; with the exception of one case, in which the tertian type was well marked. The intermittent form, less evident at the commencement, was well established in its progress. There was no uniformity in the duration of the paroxysm.

Dr. Rennes inclines to the opinion of those who, with the elder Frank, regard these neuralgias as true masked intermittents, *febres larvatz*. In fact, during their prevalence, intermittent fevers, common in former years, were not met with. Confirmatory of this view, and the proof is that which most concerns us to know, since it is the practice pursued, it was found that, however bleeding and opium or belladonna might modify or alleviate the malady, the cure depends on the administration of the sulphate of quinia. One or two days' use of this remedy, associated with narcotics, was sufficient for the removal of the disease.

Respecting emetics and purges, Dr. Rennes tells us, that he has not only failed to benefit his patients by their use, but he has found that their evacuating operation is prevented—rendered null by the neuralgia.

For allaying the pain during the paroxysm and diminishing the fluxion and weeping, which often accompany the frontal and palpebral neuralgia, the topical application of a strong solution of the extract of belladonna was found to be very serviceable. Compression of the nerve was never productive of any salutary result, whether by diminishing pain or otherwise. Cold applications and galvanism were more useful, but only as palliatives.

We ought to return thanks to Dr. Rennes, both for imparting his experience, and for his modesty in being content, master as he was of thirty-two cases of neuralgia, in his own practice, to write a short essay in place of inflicting on us a large

book. A London physician would not have allowed such an opportunity to escape of compiling a costly volume, and of either introducing or insinuating the superiority of his therapeutical means; perhaps claiming credit for originality in the use of the belladonna.

#### PARALYSIS CURED BY ELECTRICITY AND GALVANISM.

In speaking of electricity and galvanism as two separate agents we conform with the general language of the day; although we are aware, that is now becoming the popular doctrine, which makes electricity, galvanism, magnetism, and caloric, modifications merely of one great principle.

Doctor G. BARREA relates the case of an Italian peasant woman who was seized with hemiplegia of the right side, soon after parturition—the power of motion being lost and sensibility diminished. He employed various remedies, both internally and externally, without any notable benefit; but a rougher medication, in the fashion of heavy thunder and lightning, the latter of which struck the house of the patient, frightened her out of her palsy so completely, that on the following day she was quite restored, and continued well at the date of the account, written some months afterwards. There is an error in time in this history, whether on the part of the narrator or of the printer we cannot say. The woman was delivered on the 8th July, 1835. About a fortnight afterwards, following some trouble in her sight, speech and intellect, she became paralytic on the right side, as already stated. The doctor was then called in, and administered and directed a variety of remedies, which, judging from the order of their enumeration, must have taken up some days. The paralysis he tells us still persisted, when, on the 16th July following, the curative incident, thunder and lightning, took place. Are we to suppose that the first date ought to be July 8th, 1834, in place of 1835? The material fact, however, remains the same; and should be added to other incidents, of a similar nature, of the curative powers of electricity and fright.

The other case is of a less questionable character in reference to the direct remedial agency of galvanism. It was of a young Polish officer who, in a charge on a battery, at the battle of Ostralenka, was thrown down, without any show of contusion on any part of his body, and deprived of all sensation. On coming to himself, he had lost his hearing, speech, and taste; at least all of this last which depended on the tongue. After being treated unsuccessfully at Vienna by bleeding and revulsives, and at Trieste by strychnia applied on the endermic plan, he went to Paris, and there M. Magendie had recourse to the action of galvanic currents in order to relieve his deafness. One of the wires of the pile was applied to the *chorda tympani*. At the very first application sensible effects were produced, and the patient experienced a strong humming sound. On the third trial, the sense of taste began to be restored; a curious fact to the anatomist and physiologist, by its throwing light upon the origin of the *chorda tympani* and the function of the fifth pair. After seven or eight applications of the galvanic current, the patient heard the sound of a drum, then of clocks, bells, and finally, speech. To complete the cure there is only wanting a restoration of the movements of the tongue. This it is hoped will be accomplished by the means already employed, only directing the extremity of the conducting wire on the laryngeal (lingual?) nerves.\* It is, M. Magendie thinks, essential for the success of the plan, that there be direct contact between the nerve and the conducting wires—a condition easy of fulfilment in the

\* Nerfs laryngés, in the original account.—*Archives Generales de Médecine*, Mai, 1836. p. 176.

case of the *chorda tympani*, the only nerve which is external in its course. In regard to the other nerves, with a little practice, they may be reached by a needle made to penetrate them in their course.

M. Roux related two cases corroborative of the importance of the recommendation of Magendie to establish a direct communication between the conducting wire and the nerve. The first was of a young girl, who had suffered from caries of the spine followed by paraplegia, and to whom, by means of galvanic currents directed to the spinal marrow along a conducting wire which touched this part, he completely restored motion. The second case was of inflammation of the facial nerve (*portio dura*) which was accompanied by a very disagreeable sensation in the tongue, but on the affected side only. M. Roux introduces this for the directly opposite inference to which it leads from the view taken by M. Magendie, in the restoration of the sense of taste after a stimulation of the *chorda tympani*.

#### MAGNETISM IN GOUT.

The magnet, which some years ago was thought to work such marvels in the cure of rheumatism, and which is again lauded for the same good end, has been spoken of recently for its curative power in gout. The matter is thus narrated in the *Bulletino delle Scienze Mediche* of Bologna. The editors of this work were led, in consequence of a no small commercial demand for loadstone, to make inquiries concerning the uses to which it was put. It results from these, that the ex-dey of Algiers, whilst at Leghorn in 1831, mentioned to a Catholic clergyman (Father Campagnati) who was suffering from the gout, that the application of the loadstone was an oriental remedy for the disease, and one of certain efficacy. The patient immediately procured a piece of loadstone, and applied it in the next paroxysm, which was entirely removed by it. Since then he has always had recourse to the same remedy, and he finds that the attacks come on less frequently and less severely, and that they invariably yield to the new treatment. On the first symptom he goes to bed, and places the loadstone in close contact with the painful part; he soon falls asleep, and awakes free from pain and able to walk. The loadstone he uses weighs five pounds and has smooth sides. He has been subject to the disease since 1805. Other gouty patients to whom he has recommended the remedy have experienced from it similar relief.

#### FEVER, TYPHOID OR CONTINUED, DESCRIBED BY CHOMEL.

The term typhoid fever is that used by M. Chomel, in his *Leçons Cliniques*, published two years ago, to express the continued fever of English writers, and includes both their synochus, and synocha, as well as typhus. Whilst he regards fever to be a disease of the whole system, he admits its local complications or lesions. Of these some are *constant*, viz., alterations of the *follicles of the intestines* and of the *mesenteric glands*. The follicles are known anatomically by the name of the glands of Brunner and those of Peyer: the first are scattered, the second are in groups. At what time these follicles are first changed, or in what order, we cannot well say. The earliest state at which Chomel had an opportunity of examining their diseased state was on the seventh day, or that on which death took place. Out of fifty-five cases noted by Louis, the most recent was on the eighth day. They are seen at this time, like opaque spots, through the distended and almost transparent intestine at various parts along its course. The larger patches are seen in the ileum and termination of the jejunum, being most numerous towards the ileo-cæcal valve and in the upper part of the large intestine. Death during the second period of fever allows of our seeing



the follicles changed by ulceration of the mucous membrane, which is the result of the morbid state of the follicles, as it commences over the follicular patches and is confined during this period to these parts. In ninety-two cases closely observed by Chomel and Louis, ulceration commenced from the eighth to the twelfth or fifteenth days from the first attack. The ulceration proceeds from the ileum upwards. More rarely do the isolated follicles ulcerate. In some cases during this second period, the mucous membrane covering the patches becomes of a dark colour, separates from the subjacent tissues, and is observed to be perforated with a large number of holes, giving it a reticulated appearance: these holes are the orifices of the enlarged follicles. Beneath this the sub-mucous tissue is found, or a thin layer of white deposit. If death occurs at a later period, there is sometimes no trace either of the ulcerated or reticulated patches, but merely ulcers, whose edges have no traces of the whitish deposit. The duration and symptoms of the disease will indicate whether these ulcers be the accompaniment of typhoid fever. M. Chomel thinks that in the present state of our knowledge, the ulcers which are formed in the intestines after an acute disease are the result of lesion of the follicles, and not a primary affection of the mucous membrane.

The ulcers are of two varieties,—the first with very slight depression below the mucous surface and without any appearance of inflammation; the second are deep, with prominent edges of a slate colour, and extend even so far as to sometimes perforate the peritoneal membrane. The disease of the follicles may after a time disappear either by resolution, or by cicatrization of the ulcers, and the mesenteric glands, which were enlarged, resume their natural size.

There are three other diseases in which diseased follicles have been found, viz., Cholera,\* Phthisis, and Scarlatina.

Of the forty-two subjects dead of the typhoid fever, and examined by M. Chomel, all were found to exhibit follicles more or less diseased.

The connexion between the symptoms and the diseased state of the follicles has been carefully studied by M. Chomel. Headache was observed in all but one of the forty-two fatal cases; but as it precedes the lesions we cannot well admit any connexion between them. Stupor, an important symptom, cannot be referred, as some suppose, to the formation of ulcers of the intestine and the absorption of pus, any more than to the exhaustion of the constitutional powers. But between diarrhoea and diseased follicles there seems to be a closer connexion,—the former being present in forty out of fifty-two cases of the latter.

Among the changes not constantly met with are alterations in colour and consistence of the mucous membrane of the stomach and intestines. Softening of the gastric mucous membrane occurred in fourteen cases. But we cannot attach much importance to this fact, since, of twenty-four subjects dead of pneumonia, and examined by M. Chomel, there was softening of the stomach in eight. Similar appearances and proportions were observed in peritonitis, small-pox and other diseases. Softening of the mucous coat of the intestines is not common. Neither the colour of the stomach nor intestines is distinctive.

Vomiting and sensibility of the epigastrium were not greater where there was softening than where there was none. Sanguineous infiltration was not distinctive of the fever.

\* For a very full and authentic account of the follicular changes in Cholera as observed by himself, we would refer to the paper by Dr. Horner, in the *American Journal of Medical Sciences*, for May, 1835.

Next to the follicles, the *Spleen* is most frequently diseased, being either enlarged as in the acute stage, or softened, as in the more advanced,—and sometimes harder and drier. The *Liver* was sometimes softened. Louis observed this in about half of his cases.

*Organs of Circulation.*—The heart in seven cases out of thirty was softened, a state coincident generally with a similar state of other organs. In seven other cases out of the number thirty, the walls were flaccid. The softening was attended with paleness. Sometimes the inner membrane was of a lively or deep red; but in no case were there inflammatory depositions. The red condition often observed of the inner membrane of the aorta was probably owing to imbibition of the red particles dissolved, since it was in general in proportion to the putrid state of the blood.

The blood is often deficient in fibrin. Air has been found in the blood-vessels, particularly in the veins. Petechiæ and ecchymoses were observed during life in cases, so that the decomposition of the blood probably commenced before death.

In the *Lungs*, congestion of the posterior and inferior parts was noted in eighteen instances out of fifty-two: in eight cases, there were marks of pneumonia, and in two, pleuritic effusion.

The *Brain*, although its functions are most disordered, suffered fewest appreciable organic changes. Delirium present in half the cases, is not explained by the pathological changes. Oedema of the meninges and bloody points are found, it is true; but these are met with as often in cases where there has been no affection of the cerebral functions as when they have been present, and also as frequently in other diseases as this. In thirty-eight carefully observed cases there was

Injection (venous) of the meninges	- - - - -	in 4
Oedema of the meninges	- - - - -	" 7
General but slight softening	- - - - -	" 6
Serous effusion in the ventricles (from a tea-spoonful to a dessert-spoonful)	- - - - -	" 12
Bloody points	- - - - -	" 5
Increased density	- - - - -	" 2
Healthy state	- - - - -	" 15

*Causes of Fever.*—The exciting causes of the one hundred and sixteen cases which came under M. Chomel's notice are given, as far as could be ascertained by inquiry. But unless the physician have the added testimony of the friends and companions of the sick person, he cannot receive with much confidence the statements of the latter, liable as they are to be distorted from the real facts by ignorance, bad faith, or forgetfulness. In the respect of causes, hospital records are therefore less valuable than those of private practice. The following is the table exhibiting the results of M. Chomel's inquiries:

- 5 Patients attributed it to sudden cold when heated,
- 6 to deficient or bad food,
- 4 to mental depression,
- 5 to debility from other diseases,
- 3 to the action of a purgative taken for some indisposition,
- 1 to excess in drink,
- 5 to excessive fatigue,
- 2 to a violent physical shock,
- 1 to the effects of the sun,
- 5 were exposed to circumstances favourable to contagion.

Of the remaining seventy-nine, in the whole number of one hundred and sixteen cases, no cause could be ascertained. However much we may be disappointed at this deficiency of information, we cannot but see in it additional proof of the good faith of the author, and his freedom from any bias of system.

The age at which this fever most frequently attacks is, according to M. Chomel, between eighteen and thirty. It is rarely observed after forty, and perhaps in no case after fifty-five. Under ten years of age it is rarely met with.

Of the whole number of patients more than two thirds had lived in Paris less than two years, and only two were natives of that city. We well remember, when attending at the Charité, being struck with the uniformity of the question proposed by M. Lerminier to patients with this fever,—of how long they had lived in Paris!

M. Chomel, in common with most of the French school, is opposed to a belief in the *contagion* of typhoid fever.

To describe well the *symptoms* and *progress* of this fever, it must be divided into different periods or stages, into the details of which we cannot be supposed to enter on this occasion. The preliminary symptoms of diminished activity of the mind and senses, feebleness, loss of appetite, foul tongue, altered expression of countenance, &c., are well known. But in a great majority of cases recorded by the author, the attack was sudden. There were no premonitory symptoms in seventy-three out of one hundred and twelve cases; although we must take this statement with the customary allowances required for hospital patients, whose accounts of their attack, never very clear, are rendered still more confused by the fever. The disease is divided by M. Chomel into three periods, of a week in each, in which a peculiar set of symptoms are said to be exhibited.

*First Period.*—Marked change in physiognomy, diminished intelligence, apathy, muscular debility and consequent supination, constant wakefulness, or dreams so vivid as to induce in the patient the idea that he has not slept; headache, generally confined to the forehead; thick and glutinous secretions from the mouth and tongue; lips and edges of the tongue red, with a small white border on each side, sometimes preceded by other appearances of this organ. As the mouth dries, there is a uniform red colour of the whole mucous membrane, the lips crack, and the teeth have a brilliant look. There is anorexia, sometimes with nausea and vomiting; dysphagia, great thirst, diarrhoea, almost universally, amounting to from four to eight evacuations daily; in many cases gaseous distension of the intestines evidenced by percussion. A gurgling sound is heard when the lower part of the abdomen, and particularly the right iliac region, is pressed with the hand; a state probably connected with a morbid condition of the ileo-cæcal valve; and most common in the second and third stages. Generally, there is increased sensibility on pressure of the bowels, but often not unless strong pressure have been used: it may be confined to the right iliac region, to the whole hypogastric or epigastric regions, or it may extend over the whole abdomen. During the first days there is, generally, an active circulation, with marked inflammatory symptoms; pulse full, and sometimes resisting and frequent; skin red. These symptoms diminish towards the end of this period; the pulse becoming more rapid, but softer, and the skin, which was covered with abundant acid perspiration, becomes dry and hot. The urine is scanty, high-coloured and fetid. Early epistaxis is common, and is a valuable diagnostic symptom; the bleeding is rarely copious, but often occurs several times. The state of the lungs is important in diagnosis; often from the first there is a general sibilant rattle over both lungs—more evident inferiorly and posteriorly. The cough is rarely in proportion to the rattle; the expectoration is scanty, viscid and transparent.—Obstruction of the nostrils by dried mucus or blood, and extreme meteorism often produce dyspnoea. Death rarely occurs during this period.

*Second Period.*—The eruption which is peculiar to typhoid fever usually appears between the seventh and ninth days. It consists of small rose-coloured spots, dis-

appearing on pressure, from half a line to two lines in diameter, round and hardly elevated; scattered over the abdomen, sometimes on the breast; more rarely on the thighs, arms and forearms. Their number varies; in order to be characteristic, there should be at least fifteen or twenty. They do not all appear at the same time; their duration is uncertain; they ordinarily disappear in two or three days; in other cases they remain twelve or fifteen days; but it is probable these are successive eruptions. Out of seventy cases occurring in 1830-1-2, where attention was paid to this point, there were only sixteen in which the eruption did not appear. Of these fifty-four cases presenting the eruption, there were none in which it appeared before the sixth day, and in two cases it appeared as late as the thirty-sixth day of the disease. This agrees with the larger number of cases noticed by Louis.—This eruption, so common in typhus, and so unfrequent in other acute diseases, is distinguished from petechiæ and fleabites, by its colour disappearing entirely under pressure, and returning as soon as it is removed. A similar eruption was observed by Hildebrand, in the typhus of camps; and in 1814, M. Chomel had an opportunity of verifying his observation in Paris. The extent of this eruption in some epidemics, gave rise to the term petechial fever. *Sudamina* are sometimes observed at a later period, but they are not so intimately connected with this disease as the eruption just described: they are small, demi-hemispherical, transparent vesicles; when viewed obliquely, they have a brilliant appearance, but when looked at perpendicularly to their axis, they escape observation. We can understand from this, why they have been so seldom noticed or mentioned by authors. They are readily distinguished by the touch—appearing at first on the sides of the neck, and in the folds of the arm-pit and groin, and extending thence, in some cases, to the trunk and limbs. The symptom is of some importance, as it is much more frequent in this disease than in any other with which it may be confounded—as on the hips, sacrum, heel, and back of the hairy scalp. *Smudging* may be caused by pressure; but it sometimes occurs spontaneously and suddenly, as on the inner surface of the thigh, or upper part of the foot; and may follow the application of sinapism or a blister, or the irritation of urine and feces. Debility and stupor may remain as in the first period, in the least serious cases; but in the most serious forms, the prostration of strength is complete, and the patient lies on his back an inert mass. The muscles of the throat partaking of the debility, deglutition becomes impossible; the liquids being rejected through the mouth or nose. Dysphagia may depend on inflammation about the epiglottis, or on ulceration of the mucous lining of the fauces and œsophagus. Involuntary discharge of stools is regarded as another symptom of muscular debility; though we are by no means sure of the correctness of this view, especially when a retention of urine is alleged to be evidence of paralysis of the bladder. If the respiratory muscles share in the deficiency of muscular power, the patient is in danger of suffocation. It is not uncommon, at the same time, to find subsultus tendinum, convulsive twitchings of the nose and upper lip, and carpalogy. General and permanent rigidity of the limbs is almost always a fatal symptom. In mild cases the headache ceases, and to constant wakefulness succeeds drowsiness, from which it is impossible to arouse the patient, except for a few moments. This is the *Coma somnolentum* of authors, and often lasts many days. When this stupor is so great that the patient cannot be roused by any excitement, he generally dies in a few days in the same state. Instead of stupor, some have delirium, coming on in the evening or at night, or constant; and either violent or of the tranquil and muttering kind. Deafness, in most cases independent of stupor, is very frequent. The senses of sight and taste are commonly weakened. The pulse is small, weak, trembling, jerking, or intermittent; generally from 100 to 120; in others, from 80 to 90; in a few, it falls as low as 40 or 50 at the termination of this period. There is an increase of fever in the evening, sometimes hardly perceptible, at others violent, and more rarely preceded by rigors, and terminating by sweating, than in the first stage. The skin is of a more acrid heat, drier and rougher; thirst less urgent; the nostrils having become impervious to air, the patient breathes wholly through his mouth, and the mucus covering it becomes dry, and changes from a brown to a brilliant black colour: this has been mistaken for effusion of blood. Diarrhœa continues; sometimes less frequent. Hæmorrhage from the bowels, which, if abundant, speedily destroys the patient: this symptom is important in the diagnosis, as it is much more common than in other diseases. Me-

teorism continues or increases; abdominal pains are not complained of, except in the mildest cases; the breath and perspiration have an offensive smell, peculiar to fever. Of forty-two fatal cases, nine deaths took place during this stage.

*Third Period.* The symptoms either improve and lead to convalescence or become aggravated, terminating in death. Thus, thirty-two patients, out of forty-two who died of fever, died in this stage; and, of ninety cases of recovery, convalescence commenced in one only during the first period; and, when the symptoms were severe, there were no instances of improvement before the end of the second. Improvement of expression, and attention to what is passing, are often the first signs of amendment; or the comatose state is exchanged for peaceful sleep, on waking from which the patient partly recovers his intelligence: he is able to move himself a little; the tongue and mouth become moist; meteorism diminishes; the evacuations are of a more yellow colour, less fluid and fetid. Sometimes, at the moment when the first amendment of the symptoms commences, solid and formed stools are passed; sometimes black, dry, and in prodigious quantities; they had probably lain hidden in the cells of the colon. The patient becomes aware of the passage of his evacuations; respiration more free; skin more supple, or moistened. At this period it is not unusual for abscesses to form in parts of the body, which do not appear to have been irritated; and the patient or his friends become alarmed at that which is a sign of beginning convalescence. The face becomes thinner, and the features and expression more marked. Of sixty-eight favourable cases, the convalescence commenced by one or more of the previous symptoms on the following days:

In 1 patient, the 8th day after the attack.

1	—	9th.
4	patients,	the 12th.
3	—	from the 12th to the 14th days.
10	—	from the 15th to the 16th.
15	—	from the 17th to the 20th.
14	—	from the 21st to the 25th.
11	—	from the 26th to the 30th.
8	—	from the 31st to the 40th.

It will be seen by this table, although the days on which the improvement commences are very variable, yet that, in fifty cases out of sixty-eight,—that is, nearly three out of four, the improvement commenced from the fifteenth to the thirtieth day.

In fatal cases, the stupor augments, expression more changed; the mouth is drier, or, if moistened, it is only by the secretion of grey, viscid mucus, mixed with blood, and fetid. Respiration more difficult, stertorous; sometimes, towards the last days, crepitation is heard posteriorly and inferiorly, which is replaced by complete absence of respiration. Pulse more feeble; heat diminishes; skin dry, covered with cold, glutinous sweat; emaciation general and rapid; eyes hollow; features drawn down with a fixed expression, (*facies Hippocratica*.) If the patient can speak, it is with difficulty and with a trembling voice; the answers are unintelligible, even if the words are understood. The exhaustion of strength is complete, and the comatose debility is speedily followed by death. In some few cases, either at this period or during convalescence, the patient is suddenly seized, if his sensibility is sufficiently excitable, with extremely acute pains in the abdomen, sensation of sinking, alteration of expression, nausea and vomiting; and the symptoms of typhoid fever give way to those of partial or general peritonitis. The pulse is small and thread-like, the abdominal pains are excessive. This sudden attack of peritonitis, depending on no apparent external cause, is owing to perforation of the coats of the intestines and effusion of feces into the peritoneal cavity. It is almost inevitably fatal. Two out of forty-two fatal cases died from this cause, Erysipelas of the face is a very fatal complication: it was observed in four cases out of 130, and all four died. The convalescence from fever is not rapid; in some cases it is extremely prolonged. Satisfying the appetite, which is often voracious, frequently leads to very serious consequences. Oedema of the lower extremities sometimes follows fever; so does mental derangement in some few cases, but it generally disappears when the patient resumes his previous habits of life.

M. Chomel's testimony is adverse to the doctrine of crises and critical days. Of ninety-four cases, there were two in which copious perspiration was followed by benefit; and two others where an abundant discharge of fecal matter coincided with an amelioration of the symptoms; in the remaining ninety, nothing similar was observed, so that these four cases can only be regarded as rare exceptions. The only phenomena which really appeared to precede improvement were abscesses, in six cases out of eighty. The list given of the days in which improvement took place, shows that it happened many times in each day between the fifteenth and thirtieth.

We find that our limits will not allow of our completing the analysis of, M. Chomel's excellent work. This will be done in our next number, in which will be found, also, a notice of the use of chlorides in fever. We must not close this article, however, without acknowledging our obligation to the British and Foreign Medical Review, No. III., for its admirable digest of Chomel's work.

## OBSTETRICS.

ONE effect of the activity of mind directed to medical inquiries and of the great number engaged in them, each eager, if not to create an epoch, at least to leave a memento of his name behind him, is an impatience to remain in the one track, however its safety and directness have been sanctioned by time and experience. Amidst conflicting opinions and contradictory facts and experiments, the student and younger practitioner are liable to be sadly embarrassed in their selection of therapeutical agents and mode of practice generally. Journalism continually feeds the appetite which mankind has for novelty, by presenting anomalies without number, exceptive cures, and suggestions, often abundantly crude, of new remedies and new kinds of treatment; and it thus tends materially to foster this state of things. Teachers and authors are, too often, not above the petty vanity of seeking for temporary reputation by adducing a new view and a new practice, to the exclusion, or at least obscuration of opinions which have been well known to be sound, and of rules which long trials have proved to be safe, efficacious and easy of adoption. Every branch of the healing art would furnish proofs of the correctness of these remarks; but they are, we believe, most numerous in Midwifery and Surgery. It will be alleged that the very fact of these charges must be taken as proof of the uncertainty of the art in general, and of the unsoundness of the position assumed and practice deduced from it, for which a substitute is presented. Men, it will be further said, are slow to give up what they have clear evidence to show is both useful and successful. In admitting the truth of this view, to a certain extent, it is, however, clear that the causes to which we have adverted are operative. At least it must be granted that in teaching Midwifery, amidst the cautions against dangerous incidents and the discussions respecting the use of violent remedies and recourse to instruments, the student and younger physician are not sufficiently assured, by knowing that the first are of rare occurrence, that the second is very seldom necessary, and that the third may well, in a large majority of cases, be dispensed with entirely. Whether the matter be important or trivial, practical or speculative, of rare occurrence or the most common order of things, nearly the same time is consumed, nearly the same emphasis exhibited in treating of it. Need we instance, as proofs, the disproportionate time and space, according as it is lectures or a book, taken up with the theories of menstruation and generation, the formation of the decidua, the positions of the child, the turning, the kind of instruments and the manner of using them? The student, once fully interested in the question of the relative merits of crotchet or forceps, or of the several kinds of these latter, is apt to forget, that, in a tolerably extensive practice, he may never have occasion to use any such instrument as either of them. But there is another disadvantage from this preoccupation of mind. Not sufficiently impressed with the resources of nature and the ability of the human body to right itself, nor aware of the irregularities compatible with safety in the several stages of child-birth, the young accoucheur is at first all-anxious, if not miserable, respecting the course which he should pursue, especially if the labour have been somewhat protracted,—until, finally, and perhaps as he is on the point of sending for a more experienced friend to apply the forceps, or of applying it himself, the child is born, and by its loud crying satisfies him that all is well, as far as it is concerned.

We would not be understood to intimate that directions for action in anomalous and extreme cases should be withheld from the student. Quite the reverse: he ought to be fully apprised of all the circumstances preceding and accompanying the difficulty, and of the means of obviating it. But what we do contend for, is, that

he should have his mind more familiarized to the occurrences, which he will be most commonly engaged in; by the teacher or writer dwelling on every little circumstance and marking most distinctly the order of progression, and laying due stress on calmness, self-possession, and an observance of various minutæ connected with the comfort of the patient;—ending with the consolatory assurance, that he is called upon to give confidence to his patient, to be present against possible accident, but not to impertinently interfere with a process which, in the large majority of cases, will terminate well in the very nature of things; that is, agreeably to the laws of organized mechanism provided by the great Architect himself. The larger number of instances of malpractice in midwifery which are narrated from time to time, will, we fear, be found to have been caused by the implied necessity of manipulations, and of the use of instruments rashly, or with callous feelings had recourse to.

Our own memory loaded with the speculations on points already mentioned, and with the multifarious details on false positions, turning, and the use of instruments, and fearful of the difficulties and embarrassments to be encountered in midwifery practice, we were not a little relieved when, after a time, with a diploma in possession, we had an opportunity of visiting Paris and of attending cases of labour, and hearing the practical lessons of long experience. The impressions produced by the plain common sense and clear narrative and directions of the celebrated Dubois, in his last and short course of midwifery, were of a very different kind from those left by the teachings at home. Simplicity of view and efficiency of practice, divested of all cumbrous appliances, were, for the nonce, taught in Europe. Speculation, and form, and endless details on cases of exception, were advanced in America. Experience, for now a term of years, in the practice of the art, has only confirmed our opinion of the superiority of the simple course, and our more than doubts of the misdirection of mental labour in the artificial protracted and elaborate one, still in vogue among us.

We concede and believe that all the desirable points of the subject, are taught with us; but they are all too nearly arranged on the same line, without their relative importance being distinctly indicated. Of the value of teachings on midwifery, and the usefulness of a practitioner of it, no doubt can be even implied. Our remarks are directed to increase its efficiency, and to elevate it above a mere manual art. A physician who is in attendance on a female during and after confinement, can contribute greatly to her comfort, to her present safety, and to the prevention of future disease; but not by any instrumental display, or the exhibition of medicines to hasten labour; or by hasty extraction of the placenta. A timely bleeding, or laxative, or laxative enema, or anodyne, some slight change in position, moderate and equable friction of the abdomen, are the best expeditors of labour. But a simple piece of advice, in the way of caution, will often save a vast deal of future suffering; as where an accoucheur warns his patient against taking an erect posture, and walking about too soon, under the penalty, for disregard, of *prolapsus uteri*.

*Pronotion of Labours requiring Instruments.*—In confirmation of our preceding remarks, we shall give the testimony of Dr. Collins, who, for seven years, was chief physician, or master, as it is termed, to the Dublin Lying-in Hospital. During that period, 16,414 women gave birth to 16,654 children. Out of this large number of deliveries, instrumental assistance was required twenty-seven times only—the forceps twenty-four times, and the lever thrice. In thirteen of these twenty-seven cases, the labours were complex. The entire number gives us the average of about one in six hundred and eight deliveries. “According to this calculation,” says Dr. Collins, “most physicians in private practice, should require to use the forceps or lever but very seldom; as, supposing an individual to attend four thousand cases in the course of his life—which is a greater number than falls to the lot of most men—instruments would be necessary in little more than six cases.” The proportions given from the result of Dr. Joseph Clarke’s experience, are 14 in 10,199.

The above estimate and remarks refer to the use of instruments with the intention of terminating a labour, when the uterus and its associate muscles are unable to accomplish the purpose; and always in the hope of preserving the life of the child, without detriment to the mother. They represent the ordinary course of things, provided, what is happily the case in general, that the pelvis be well formed, and

the uterus have no anomalous rigidity. But where there is a deformed or a too narrow pelvis, causing irremovable impaction of the head of the child, or preventing its entrance into the pelvic strait, then another kind of instrument is used, and the case becomes a surgical one, in which it is necessary to remove the child, by first diminishing its bulk, as we would any foreign body, which by its location and pressure endangers life. This is done by the crotchet. The use of the stethoscope enables the accoucheur to ascertain that respecting which he feels so much solicitude—viz: whether the child be still living, or is dead. If the latter, he has no hesitation in proceeding at once to its extraction. The proportion of cases of this description are much greater in Europe than in this country, and more in hospital than in private practice; for in Dublin many of the worst cases are brought to the hospital pending the labour, and after a discovery out of doors of their dangerous or desperate character. The result of Dr. Collins's observations shows that out of 16,654 births, the perforator had been used, and the child destroyed in 118 of this number, or 1 in 141. Dr. Clarke's proportion, also deduced from hospital returns, was 1 in 208.

The following table shows the practice of different accoucheurs in reference to the use of instruments:—

PHYSICIANS.	Total number of births.	Forceps or vectis used in.	Crotchet used in.	Relative frequency of instrumental deliveries.
Dr. Carus of Dresden . . .	2549	184	9	1 in 13
Dr. Kluge of Berlin . . . .	1111	68	6	1 in 15
Dr. Nægele of Heidelberg .	1711	55	5	1 in 28
Dr. Boer of Vienna . . . . .	9589	35	13	1 in 199
Mad. Boivin of Paris . . .	20517	96	16	1 in 183
Dr. Merriman . . . . .	2947	21	9	1 in 98
Dr. Joseph Clarke . . . . .	10199	14	49	1 in 162
Dr. Collins . . . . .	16654	27	118	1 in 114

*Absorption of the Placenta.*—Due time being allowed for the contractile efforts of the uterus to detach and expel the placenta, and the desired result not being obtained, the accoucheur, as it is well known, endeavours to procure the separation by suitable manual efforts, so made as not to either unduly irritate the uterus or give rise to inversion or other displacement of the organ. The dangers from allowing the placenta to remain adherent are uterine hæmorrhage in the first instance; and, should the uterus have contracted and all risk of this kind over, a fetid discharge per vaginam, retchings, abdominal tenderness and fever, until the remains of the placenta come away. Another and different result and view have been lately suggested by a writer (M. G. E. Maslieurat-Lagémard) in the *Archives Générales* for May last. Agreeably to his showing, the adherent portion of the placenta is not broken down and gradually discharged with the lochiæ, but is actually absorbed, without any local irritation or notable constitutional disturbance. The female does well afterwards, and as a proof that the uterine functions are entirely restored and healthy, menstruation and pregnancy show themselves in due succession. Several cases occurring to different practitioners are recorded by M. Maslieurat-Lagémard, in such detail and in so authentic a guise as to render it difficult to deny the fact. Certain it is, that every accoucheur, of even limited range of practice, must have met with more than one case in which a portion of the placenta has remained behind adherent to the uterus, without his deeming it necessary to attempt its extraction from this latter, which has sufficiently contracted and been diminished in bulk to remove all fear of hæmorrhage. He must also be aware, that no inconvenience has resulted either at the time or subsequently in consequence of this adhesion.

A practical inference of some moment, from the view now taken is, that the accoucheur should not, from a fear of the consequences of retained placenta, subject the female to irritating and protracted manual efforts for its removal, at the risk of inflaming the uterus and causing partial procidentia.

*Prolapsus Uteri.*—Dr. Davis, in his *Principles and Practice of Obstetric Medicine*, recommends for incipient cases of descent of the uterus, active tonics, preceded or



accompanied by alteratives; and where the vagina is in a relaxed state, astringent injections. When the prolapse is chronic, he considers the use of the pessary to be inevitable. The sponge pessary is the one which he prefers; but where it cannot be managed, the next best substitute is the ring pessary, made of light wood.

Dr. Hamilton (Practical Observations on Various Subjects relating to Midwifery, 1836,) condemns the practice, so commonly recommended, of confining patients with prolapse of the womb to the horizontal posture, which is apt to injure the general health, and to increase the relaxation of the natural supports of the organ. He regards astringent injections as worse than useless; and he urges the following objections against the use of pessaries. They act only as palliatives; they irritate the vagina and keep up a mucous discharge; they make injurious pressure on the contents of the pelvis; they are apt to become incrustated with a calcareous matter, if not frequently taken out and cleaned; and, lastly, "they subject the patient to a charge of the medical attendant for life."

The only instrument which Dr. Hamilton has used for a number of years past, is either a strong T bandage, or, in more serious degrees of the disease, a circular metallic belt, like that of the common truss, provided with a cross or perpendicular strap, and to this strap is attached a cushion stuffed with horse-hair, about six inches in length by three in breadth, and of a thickness proportionate to the degree of relaxation, and therefore of the support required. "This bandage is to be worn whenever the patient is out of bed, as long as any symptom of the disease is perceived. It effectually relieves the unpleasant feelings, while it enables the patient to take walking exercise, which is so essentially necessary to the relief or cure of the disease." By this simple means, in conjunction with the use of cold bathing, and of appropriate constitutional treatment, Dr. H. has for many years past quite superseded the employment of pessaries.\*

For many other details of practice and comparative observations in Obstetrics, we would refer to a highly instructive analytical Review on the subject, in Johnson's Medico-Chirurgical, for July last.

## HYGIENE.

### EQUILIBRIUM OF POPULATION AND SUSTENANCE DEMONSTRATED.

Dr. Loubon, in his original essay on this important subject, proposes a check both moral and healthful, to a redundant population; and he indicates also a dietetic principle, which, if carried into practice, would allay the fears of legislators respecting this redundancy.

The check may be expressed in a few words. It consists in prolonging the period of lactation, and by this means diminishing the number of births; since, as a general rule, mothers do not become pregnant during lactation.

For England, the question is thus presented. The increase of population is one per cent. annually. The average number of children to a marriage is 4.5. The average age of marrying is very near twenty-four years. Admitting then the time of marriage for females to be twenty-four, and that of child-bearing to terminate at forty-four, the average interval between each child will be fifty-four months, or four years and a half. Ten months is the common period of lactation at present. What increase of the time beyond this will be necessary to keep population in check, as it advances now in England? The reply is, about *fifteen months*, as thus:—To ad-

\* The reader who has seen Dr. Hull's abdominal supporter for the cure of prolapsed uteri, will recognize the sameness of principle, and in a great degree of instrument, as above recommended. The anterior pad over the pelvis in Dr. Hull's instrument, is as liable to aid in displacing, as to preserve the uterus *in situ*.

† The remainder of the title page of Dr. Loubon's work runs as follows: "*Showing, on Physiological and Statistical Grounds, the Means of obviating the fears of the late Mr. Malthus and his followers.* London, 1836."

mit the nine months of gestation, the ten months of lactation, and one tenth of the remaining thirty-five months, as an equivalent for the present increase of population, which would make the period for suckling to be thirteen months and a half. But to this should be added six weeks, for the chances of impregnation taking place during the three months and six weeks; making the whole period as above, viz., fifteen months. The extension of lactation must necessarily increase the 4.5 years between each child to about 5, and consequently reduce the 4.5 children in a family to 4. Now, as one half die under the age of marriage for females, the result will be—only a representative for a father and one for a mother, on an average, in every family throughout the country.

The two points, one of medicine, and one of morals and economy, connected with this subject are, first; whether the mother's health will allow of her suckling her child for fifteen months; and secondly, whether the interval, if it were established, of five years between each child, would not leave a large number of the offspring unprovided for at a period when the parents were disabled by age from either seeing them set out in life or making some provision for their education and support. It would be a fortunate circumstance to the parties most directly interested, we mean the mothers themselves, if both the attention of them and of their medical advisers were more pointedly directed to the causes of imperfect lactation, and to the means of enabling them to avoid these and to go through the longer term with health and comfort. A more consistently rational diet, regular hours and suitable exercise in the open air, would be found, we believe, fully adequate to the emergency. Contrary course and practices are by no means confined, as we might at first suppose, in this country, to the rich, the fashionable, and the luxurious.

Dr. Loudon gives illustrations of his doctrine by pointing out the influence which the period of lactation exerts over the population of various countries.

The dietetic principle of this author, rather hinted at than fully laid down, would be to compare the amount of land susceptible of cultivation, and the nutritive properties, ascertained by experience, not conjectured by chemistry, of various articles of vegetable product, as potatoes, for example, with the population which they would support. Thus, he tells us that two millions and a half of acres of potatoes will permanently produce vegetable food for upwards of one hundred millions of people, or four times the present population of Great Britain and Ireland. There are, he says, seventy-six millions and a half of land in the United Kingdom, and thirty millions waste,—one half of which latter is capable of cultivation.

#### CHANCES OF LIFE—AT DIFFERENT AGES AND IN DIFFERENT OCCUPATIONS.

Dr. Graves, in a clinical lecture, has given many interesting details and calculations on this head. The following is stated by him, as a calculation of the chances of life, approaching to the truth. The chances are equal that every healthy adult will live half the difference between his own life and eighty-one. Thus, if a man be forty years of age, the chances are equal that he will live half the difference between it and eighty-one years, viz., twenty years and a half, and therefore that the duration of his whole life will be about sixty years.

As regards the proportion of the sex dependent on the vigour of body and employment of the parents, M. Giron found that the pursuits of agriculture tend to the increase of the male population, and that the habits of commerce and manufactures favour an augmentation of the female population.

The cultivation of science and literature seems to be favourable to longevity, contrary to the opinion generally entertained on this point. The average of the lives of a hundred and fifty-two scientific and literary Frenchmen is sixty-nine years. The average duration of life in twenty female authors of the last century, is seventy-one years. Mrs. Hannah More was eighty-nine years, and Mrs. Barbauld eighty-three years old at the time of their decease.

*Comparative Mortality of Males and Females.*—Mr. Rickman's remarks on medical statistics (in Medical Gazette) show, from the accurate investigation of the ages, at their death, of persons of all classes in England, for eight or nine years before as well as after the year 1831, that the advantages in favour of the life of females

amounts to four per cent. But in the classes who purchase government annuities, classes necessarily above the reach of hardship and privations, the advantage on the side of the female is actually as high as thirteen per cent.

*Increased Value of Life in Great Britain.*—The period, says Mr. Rickman, of remarkable increase of the duration of life in the mass of the population is evident enough in the *stationary number of burials* during thirty-five years (1789—1815), while marriages increased from 64,000 to 89,000 (39 per cent.), and the population in larger proportion (about 50 per cent.), from the combined effect of increasing longevity and the usual excess of births as compared to deaths in a thriving community.

*Relative Longevity of Medical Men.*—Physicians had some cause to be a little nervous, after reading the formidable account of Dr. Casper of Berlin, that they were the shortest lived of all professional men. Subsequently, Dr. Lombard of Geneva, gave a somewhat more favourable though still far from encouraging view. But thanks to M. Dubois, we may now be of good heart, and live as long as our fellow men in general.

According to Casper, there were only twenty-four out of one hundred physicians, who at their deaths reached seventy years. The proportion that attained this age, according to Lombard, was 33 per cent.; whereas, Dr. Dubois shows, from an inspection of the ages of eight hundred and fifty medical men, that rather more than forty-two in a hundred lived to seventy years of age.

*Comparative Mortality of the Married and the Unmarried.*—Mr. Rickman has exhibited a very different view of this question from that taken by Dr. Casper. The latter endeavoured to prove that the married are much longer lived, as we must suppose them to be happier, than the single. He asserts that, in the case of females the mean duration of life for the married woman of twenty-five is above thirty-six years; while for the unmarried it is thirty and a half. At thirty there is a difference of four years in favour of the married; at thirty-five, two years; and so on. With respect to men he asserts, from Deparcieux's and the Amsterdam tables, that the mortality of those from thirty to forty-five years of age is 27 per cent., for the unmarried, while it is but 18 for the married; and that for forty-one bachelors who attain the age of forty, there are seventy-eight married men. In advanced life the difference is still more striking. At the age of 60 there are but twenty-two unmarried men alive for forty-eight married; at seventy, eleven bachelors for twenty-seven married men; and at eighty, for the three bachelors who may chance to be alive, there are nine in a state of married bliss. Nearly the same proportion holds good with respect to the female sex; seventy married women, for example, attain the age of forty-five, whilst only fifty-two unmarried reach the same term of life.

Mr. Rickman has exposed this libel on bachelors and maids, and has shown that Dr. Casper's conclusions are based on miscalculation.

The question admits, after all, of a wider range of argument and illustration than would be furnished by mere figures. That single females suffer from various disorders included in the generic term hysteria, to which married ones are less liable, a physician cannot doubt; and that the particular state of the nervous system thus induced will predispose them to the operation of numerous causes, physical and moral, of disease, is also certain. As an offset to this, are the perils of pregnancy, child-bearing and lactation, in married females. If the affections of the latter find a proper object and room for expansion in many cases, how often, on the other hand, are they tried and shocked by marital neglect, cruelty and general misconduct! As regards males, it happens, not much to their credit in a moral point of view, that they do not suffer, sexually, from their bachelorship; and the effects of marriage on them must be measured by the influence which it exerts on their feelings and habits.

[We had prepared for this number, from the *Annales d'Hygiène et de Médecine Légale*, an interesting article on the *Preservation of the Health of Printers*; but must postpone its insertion until next month, for want of room.]

## MEDICAL JURISPRUDENCE.

## SUICIDE, BY HANGING, OF A BOY TWELVE YEARS OLD—THE FEET RESTING ON THE GROUND.

THE subject in this case was a boy twelve years old, who, displeased at being sent up to his room early in the evening with a piece of dry bread in his hand, as a punishment for breaking his father's watch, destroyed himself. The next morning he was found hanging by his neck from a nail in the wall, five feet two inches above the floor. To the nail had been fastened one end of two cravats tied together; the other end of the lower cravat was passed round the neck, and at the back part, or nucha, formed a running knot. The compression of the neck, by this kind of ligature, was considerable—the knot being behind. The length of the two cravats united was about twenty inches,—that is, from the nail to the neck of the person suspended. The feet were about four inches from the floor, resting on a piece of plank, which, again, was on a large stone. Near these objects there was a small wooden foot-stool upset, leading to a belief that the boy had made use of it to stand on, so as to be able to reach the nail and fasten the cravat to it; for he was not tall enough to do this without such aid. The position of the body was as follows:—the back towards the wall and a little inclined to the right, the head resting on the chest, the legs bent, the knees four inches above the plank already mentioned, the feet resting on it and somewhat behind and to the left. The face was quite pale; the eyes in what might be called their natural state; the lips full and livid. Frothy mucus issued from the mouth and nostrils; the tongue was swelled, and protruded between the teeth. The inferior extremities were slightly livid, and all the articulations, as well as the body, were very stiff. From these observations, made on the spot by Dr. Carrez and on the requisition of the mayor of the commune of Puteaux, in which the event took place, Dr. C. concluded from all he saw, that the boy (Henry Fournier) had committed suicide by means of the cravats, which served instead of a rope or cord; and that his death was occasioned by asphyxia from hanging, which seemed to him to have taken place at some time between seven and ten o'clock of the preceding evening.

All the witnesses called bore testimony to the mildness and intelligence of the boy, who made no complaint of ill treatment, but who had said that if there was a blow to come from his father it was sure to be for him, and not for his sister, whose misdeeds were always overlooked. It was also shown that Henry was well taken care of by his father, who sent him to school, and also by the person who was generally supposed to be his mother.

Farther and more minute investigations being thought necessary by the law officers, Drs. West and Ollivier of Angers were sent for, in order to make an examination of the dead body. Their report runs as follows:—

We found the mark of the band on the anterior part of the neck, below the os hyoideus, and over the thyroid cartilage, which was strongly pressed in. Before and on the right side the print is marked by redness of the skin; on the left the print is mottled with abrasion and tearing of the epidermis. The two ends of the print of the band are obliquely backwards and upwards towards the mastoid processes. On the posterior cervical region there are only cadaveric suffusions visible. Dissection did not reveal any sub-cutaneous or inter-muscular ecchymoses. The upper eyelids exhibited a great number of small rosy points, with the appearance of ecchymoses from puncture, and analogous to petechiæ. The tongue was livid and swelled, and projected from between the teeth about seven or eight lines; the lips were bluish. On the chin were perceptible a superficial excoriation and slight ecchymoses. Cadaveric suffusions gave a bluish tint to the limbs. The other parts of the body did not present any trace of external violence. The brain, on opening the cranium, was found to be injected throughout, and its consistence remarkably great. The middle coat of the carotid arteries, the trachea and the lungs were in a natural condition. The stomach contained alimentary matters imperfectly digested, such as bread and tolerably large pieces of potato. Inspection of the cervical vertebræ did not exhibit any lesion.

The conclusions from the above, are—1. Death was the consequence of hanging,

and of the strong and continued pressure on the neck by the *ravat*, which served as a band.

2. The absence of marks of external violence on other parts of the body and the oblique direction of the marks of the band lead us to believe that the death was from suicide.

3. The region of the neck occupied by the band, the state of congestion of the brain, the punctured ecchymoses of the skin of the eyelids, as also the swelling and lividness of the tongue, are so many circumstances which, to our minds, prove sufficiently that death occurred through the brain and not through the lungs; in a word, that in this case suspension caused apoplexy rather than asphyxia.

The editors of the *Archives Generales*, from which we derive the above account, add that M. Marc, in his memoir on the death of the Prince of Condé,\* has added to his own observations those of M.M. Piorry, A. Devergie, Wegler of Coblenz, and Dumeril, on the cases of suicide in which death was caused by hanging, whilst the feet rested on the ground. Since then, M. Rendet† has published an additional account of a curious case in its details.—Hence the possibility of death by incomplete suspension of the body cannot any longer be contested. Another instance of suicide in a subject of tender age has been recorded by M. Pointe, a physician of Lyons.‡ The little reprobate in this case was destroyed by shooting himself, after being reprimanded by his father.

Out of 1898 persons received into the Salpetriere, or hospital for insane females, during a period of six years, and of 191 cases of suicide during the same time, there were, according to Esquirol, only two of these latter under fifteen years of age.

## TOXICOLOGY.

### THE HYDRATED PEROXIDE OR TRITOXIDE OF IRON,—AS AN ANTIDOTE AGAINST ARSENIC.

The value of this preparation of iron, as a preventive of the effects of arsenic on the living body, has been tested in a favourable manner by MM. Leseur, Miguel and Soubeiran of Paris, Borelli and Demaria of Turin, in experiments on dogs; and by MM. Geoffroy of Paris, and Bineau and Majesté of Saumur, in trials on the human subject. Orfila, in communicating to the French Academy of Medicine the results of Leseur's experiments, thought that the German chemist, M. Bunzen, who discovered the antidote, had not overrated its importance.

In performing experiments to determine the effects of a poison on dogs, it must be borne in mind, that if a large dose, of arsenic for example, be given, and the animals allowed to vomit, it produced no effect. On the other hand, the operation to prevent the ejection of the contents of the stomach, which consists in tying the œsophagus, is itself fatal in its results. But as the arsenic kills in a few hours, if retained in the stomach, and the ligature of the œsophagus is not fatal often under two or three days, or even more, we can readily refer the death of the animal, into whose stomach arsenic has been introduced, and on which the ligature of the œsophagus has been practised, to its true cause. When, therefore, another substance is introduced at the same time with the arsenic, or soon after, and death does not take place for a relatively protracted period, we are authorized in believing in the counteracting agency or antidote operation of this substance, whatever it be. A dog, whose œsophagus was tied without any other change being induced, survived seventy-eight hours. Two other dogs, to which respectively nine and twelve grains of arsenic were administered, and which were prevented from vomiting by tying the œsophagus, died in two hours and two hours and a half. In the experiments subsequently made, the recently prepared peroxide of hydrated iron, mixed with water, was used in the proportion of twelve parts to one of white arsenic.

The results were that three dogs to which had been given poisonous doses of arsenic, to the one, twelve, and to the other two, eighteen grains each,—and subsequently, the hydrated peroxide of iron, the œsophagus being tied, survived the experiment,—the first, six days, the others, seventy-eight and eighty-four hours.

\* *Annales d'Hygiene et de Médecine Legale*, Janv. 1831.

† *Ann. d'Hyg. &c.*, Juil. 1833.

‡ *Gazette Medicale*, 1835, p. 780.

From the first one the ligature was removed after twenty-four hours, but the deglutition of solids being impossible, the animal died on the sixth day.

Another series of experiments was instituted to ascertain how far the effects of the poison could be arrested by the iron, after some time had elapsed from the administration of the former. The results showed that in all, life was greatly prolonged by the iron beyond the time when it would have been destroyed by the arsenic. So far MM. Miguel and Soubeiran.

The experiments of the Italian physicians were still more conclusive. They need not be repeated here, except one, in which a dog was made to swallow ten grains of arsenic, and, immediately afterwards, three ounces of the hydrated peroxide; and its œsophagus was tied. The ligature was removed after twenty-four hours; and the dog continued to live for twelve days, at which time its deglutition was free: it was then killed by the same dose of arsenic as at first, but given without the peroxide of iron.

The case related by M. Geoffroy, of the antidotal powers of the iron, was of a hair-dresser, who, in a fit of delirium tremens, took from his desk a paper which contained white arsenic, amounting, as was afterwards ascertained on inquiry, to at least a drachm and a half. In twenty minutes afterwards the hydrated tritoxide was obtained, and four or five pints of warm or cold water, charged with it, were given in a quarter of an hour:—the treatment was continued for the next seven or eight hours, so that, altogether, the patient took twenty to twenty-five pounds of water, in which was suspended six ounces and four drachms of the preparation of iron. The first administration of the antidote was followed by copious vomiting and a stool, and during the remaining period the patient was vomited and purged three times. There was neither colic, heat in the throat, nor any symptom of poisoning: he complained of cramps in the fingers, and during the whole time was delirious, talking and gesticulating. He slept during the night ensuing the treatment, and in the morning appeared well.

The hydrated peroxide of iron used in the above experiments was procured in the following way. Sulphate of iron of commerce was mixed with five or six times its weight of water in a platinum or porcelain capsule, and when it boiled, small quantities of nitric acid were added until the ruddy vapour ceased to ascend: this was to bring the oxide of iron to its maximum of oxygenation. The liquor was then diluted, and the iron precipitated by liquid ammonia. The precipitate was washed and mixed with a small quantity of water until it had the consistence of clear "bouillie." As it cannot be weighed in this state, thirty-six times as much sulphate of iron is required as the poison taken, for the sulphate contains one-third of its weight of peroxide. It should be kept as a hydrate, for the dried powder does not act as an antidote. The chemical change consists in a conversion of the arsenious acid into arsenite of iron. Three times the quantity of the hydrated peroxide of iron is sufficient to neutralize arsenious acid in solution, and the decomposition is instantaneous; but as the arsenic when used as a poison is almost always swallowed as a powder, a much larger proportion of the antidote is advisable, for the action goes on very slowly. Even then, however, it must neutralize all ill effects, if it is in contact with the arsenic, for as soon as the smallest quantity of the poison is dissolved, the oxide of iron acts upon it and precipitates it.

It is recommended in all cases of poisoning by arsenic to give the patient large quantities of hydrate of the peroxide of iron; at the same time also to encourage vomiting, to get rid of undissolved arsenious acid from the stomach; and to repeat the hydrate as long as there are symptoms of any of the poison remaining.

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## SURGERY.

We do not propose to ourselves, because it would not be the most profitable course to our readers, to treat in each number of the Journal of the whole circle of subjects of medical science. According as the mass of information under any one head is found large, so will our notice of it be proportionably full. Numerous

isolated facts only distract attention, unless they be referred to some guiding principle, or be made to illustrate a particular practice. In Surgery, we regret to say, there is often a more obvious desire to describe new instruments and operations, and wonderful cures, than to prevent the necessity of recourse to the knife; or, if it be used, to point out faithfully the accidents attending its use, and the circumstances of subsequent occurrence, which would prove that the operation was injudicious and of disservice, if not actually mischievous. Of late years, the most marked improvement in Surgery is the substitution of an apparatus to break down the stone in the bladder, and afterwards discharging the fragments, for the use of a cutting instrument, knife, gorget, or bistoury, to make an opening into the bladder and extract the stone entire. Of the merits and difficulties of the new operation, divested of unmeaning subtleties and refinements of modes, we shall most probably have occasion to speak in our next number.

Among the items of surgical practice in the Journals before us, we find a recommendation to treat *inflammation of the testicle by compression*—except in cases where the inflammation had arisen from errors in diet, such as abuse of spirituous liquors, or if it produced much gastric distress. These states are to be removed before compression is practised.

*Belladonna* is advised as a topical application in *retention of urine, spasmodic contraction of the uterus*, and in *strangulated hernia*. The preparation is an ointment composed of two drachms of *extract. bellad.* to one ounce of lard.

*Chlorine gas as an injection for the cure of hydrocele*, used by Dr. Deblors of Tournay, has been recommended, since his death, by M. Decondé.

## PHYSIOLOGY.

The chief novelty in Physiology of late, is the use of the *cochlea* in the organ of hearing suggested by Dr. Weber. He endeavours to show that the office of this structure is to enable us to appreciate those sounds which are transmitted through the cranium as a solid.

The experiments on the *brain, spinal marrow, and nerves*, by Professor Mayer of Bonn, are sufficiently important to justify a more extended notice than this simple announcement.

We shall give, in our next number, an abstract, at least, of the physiological matters reported on and discussed at the late meeting of the British Association in Bristol.

Dr. HAXALL's *Dissertation on the Importance of Physical Signs in the Various Diseases of the Abdomen and Thorax* has just been received. To the author of the Dissertation was awarded the *Boylston Prize*—a premium of fifty dollars, or a gold medal of equal value. The importance of the subject, and the known industry of Dr. Haxall, are sureties for the instruction to be afforded by the perusal of this Essay. It will be noticed with suitable fulness in our next number of the Eclectic.

Works transmitted by their authors or publishers to the care of Haswell & Barrington, or of Desilver, Thomas & Co., for the Editor of the Eclectic Journal of Medicine, will be regularly noticed, either in the form of analytical review or of summary of their contents.

# THE ECLECTIC JOURNAL OF MEDICINE.

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**EDITED BY JOHN BELL, M.D.**

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MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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## **BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**

THE sixth meeting of the British Association for the Advancement of Science was held at Bristol, in the latter part of the month of August, of the present year. The efficient and scientific part of the labours of this body is performed by the various Sections, the reports of which constitute the business of the Association, except some matters, such as pecuniary grants for experiments, determined by a General Committee. For mere membership the requisites are very moderate; the chief one being the payment of a certain sum into the hands of the Treasurer. On the occasion of an annual meeting large additions are made to its members, mainly from the residents of the place of meeting.

“The actual benefits which have been conferred on science by the Association, are those which Professor Sedgwick has, more than once, eloquently described. The yearly congregation of men of various classes and opinions, but all desirous to promote the common interest, cements a friendly intercourse at once beautiful and advantageous. Asperities are rubbed off; a valuable example of union and social kindliness is set; strangers see men of high influence and station, whom they know to be strongly opposed in other relations of life, acting together with amenity for a general benefit, and the example is not lost upon the community at large; a good understanding is created and kept up with the wise and eminent of foreign countries; and, in truth, there are so many things to recommend these Meetings to favour, that it is unnecessary to praise them for what they have not means or power to accomplish. In regard to science, we would say, that their best effects are rather negative than positive; and, if they do not elicit great truths and discoveries, it cannot be denied that they prevent the private and secret cherishing of much error; reclaim wanderers from wrong roads in which, but for these collisions, they would probably wander to the end of their lives; and dissipate a num-



ber of bubbles which burst before the searching sense of the able individuals to whom they are exhibited as marvellous inventions.”\*

There were seven Sections at Bristol; viz. 1. Mathematics and Physics; 2. Chemistry and Mineralogy; 3. Geology and Geography; 4. Zoology and Botany; 5. Medicine; 6. Statics; 7. Mechanics. The Sections are designated also by the letters of the alphabet. Our object in noticing the proceedings of the Association, is to direct the attention of our readers to the part which the members of the medical profession perform on the occasion. Committees of the medical as well as of the other Sections are appointed at a meeting of the Association for one year, to report on the following year, or even still later, if need be. We premise this information, in order that our readers may understand the reference made to the Dublin Committee, with whose report we begin the account of the proceedings of the Medical Section of the British Association, in its late meeting at Bristol. The present sketch is derived from the *Athenæum*, and is introduced, here, in anticipation of the more full and formal history which will be published hereafter in connexion with the reports of the other Sections, in a book form.

#### SECTION E.—ANATOMY AND MEDICINE.

*President*—Dr. Roget. *Vice Presidents*—Dr. Bright, Dr. Macartney. *Secretaries*—Dr. Symonds, G. D. Fripp, Esq. *Committee*—Dr. O’Beirne, Dr. Bernard, Dr. James Bernard, S. D. Broughton, Esq., R. Carmichael, Esq., Dr. Carson, Bracey Clarke, Esq., E. Cock, Esq., J. W. Cusack, Esq., H. Daniel, Esq., J. B. Estlin, Esq., Dr. Evanson, W. Hetling, Esq., Dr. Hodgkin, Dr. Houston, Dr. Howell, Dr. James Johnson, R. Keate, Esq., O. King, Esq., Dr. Prichard, O. Rees, Esq., Dr. Riley, Richard Smith, Esq., J. C. Swayne, Esq., N. Vye, Esq., Dr. Yellowley.

*August 22.*—Dr. Roget opened the business by a few words on the nature and objects of the Association, and then, for himself personally, entreated the indulgence of the members, as he had been lately suffering from a severe attack of ophthalmia. Dr. O’Beirne then read the following Report of the Dublin Committee on the Pathology of the Nervous System:—

“The Committee appointed in Dublin to investigate the Pathology of the Brain and Nervous System, feel compelled on the present occasion to confine themselves to an analysis of the cases of nervous affections, which have come under their observation, during the short period which has elapsed since they have considered themselves to be regularly appointed.

“They are of opinion that, in order to arrive at accurate Pathological conclusions on a subject so extensive and complicated, and on which the most eminent authorities are found to disagree, a very great number of cases should be first submitted to their examination—then, the symptoms of each case carefully registered, and, subsequently, accurate post-mortem examinations made, in the presence of the Committee, to ascertain the structural lesion or lesions with which the symptoms coexisted.

“As far as their investigations have yet extended, they see that the subject, if considered in all its details, will require a considerable length of time before they can accumulate such a number of cases and matured observations, as would justify them in drawing general conclusions.

“Further they have to state, that they have collected some valuable facts relating to injuries and diseases of the nerves, which seem to throw light upon the disputed points of the physiology and pathology of this portion of the nervous system. They are of opinion, however, that more extended observations on this branch of the subject, are required to be made. They would also submit the necessity of repeating those experiments on animals, upon which so many authorities rely as a foundation for their doctrines.

“The Committee, influenced by the above considerations, have decided on avoid-

\* *Lit. Gaz.*, Aug. 27, 1836.

ing for the present, any attempt at drawing general conclusions. They consider it more judicious to collect and arrange for a future report, should they be re-appointed, the abundant materials, which their opportunities enable them to supply.

"In furtherance of this object, they have been for some time engaged in registering the history and symptoms of cases of nervous affections in the wards of the House of Industry, Dublin, and the different hospitals connected with it.

"This Institution contains, independently of cases of paralysis, (estimated at about 150), the following cases of mental and nervous affections, arranged as follows:—

	Males.	Females.
Chronic Insane - - - -	74	179
Epileptic ditto - - - -	21	33
Congenital Idiots - - - -	69	62
Epileptic Idiots - - - -	14	20
	<hr/> 178	<hr/> 294
		Total, 472

"The number of cases which the Committee have hitherto been enabled to examine with sufficient accuracy, amounts to 41. Of these they have made an analysis. They also have some cases of affections of individual nerves.

(Signed)

James O'Beirne, M.D.  
George Greene, M.D.  
John Macdonnell, M.D.  
R. Adams, A.M. T.C.D.

"Dublin, August 17, 1836."

Dr. O'Beirne then read a paper entitled, 'An Abstract of a Work on Tetanus,' in which he pointed out the use of tobacco enema, and dwelt at considerable length on the differences between the spurious tetanus and the true.

At the close of the paper, Dr. O'Beirne, in reply to questions put to him by some of the members, observed, that with respect to arguments deduced from the exhibition of poisons, he thought they must be drawn from analogy, and be unsatisfactory; there was no poison which produced tetanus, without producing other symptoms not peculiar to tetanus, and that all cases referred to in illustration of the subject ought to be shown in all their bearings. One gentleman in relating a case had stated, that there was tenderness of the abdomen, whereas in *real* tetanus there is no such symptom; and he believed that many others referred to as tetanus, were far from genuine.—Mr. Bracey Clarke stated, that he had observed some remarkable appearances in the bodies of horses which had died of tetanus. The intestines were always constricted, and he uniformly found on dissection, either great congestion, or positive inflammation of the lungs. Bleeding had been found to effect a cure.—A member inquired of Dr. O'Beirne, whether he had ever used oil of turpentine in this disease; he had found it beneficial as an enema; the proportion he used was  $\frac{3}{4}$  oil Tereb. to  $\frac{1}{4}$  of laudanum; and pouring cold water on the head at the same time. Dr. O'Beirne had no objection to the use of the oil, but he wished not to complicate the treatment. Mr. King related a case, which terminated favourably after an immense living lumbricus had been voided.

A short description of a case of Aneurism of the Arteria Innominata, furnished by Sir D. H. Dickson, was then read.

August 23.—Dr. Roget in the chair.—The first paper read was entitled, 'Observations on Remedies for Diseases of the Brain, by Dr. Prichard, of Bristol.—Dr. Prichard remarked, that perhaps all curative attempts in cases of disease affecting the brain resolve themselves into the modifications which medical art is capable of effecting in the vascular state, of parts within the skull. We can promote by various means either fulness or inanition of the blood-vessels in the brain: whether anything beyond this is in our power, is very uncertain. Besides general and local bleeding, all those means belong to the same class, which act by refrigerating or heating the surfaces either of the head or of other parts. Refrigerant applications to the head have the effect of contracting the calibre of the arteries, and thereby diminishing the quantity of their contents. Pediluvia, or other means of applying warmth to the lower extremities, produce a similar result by augmenting the capa-

city of vessels remote from the head, and causing a greater quantity of blood to be determined into them. All these means plainly owe their efficacy to the modification which they bring about in the state of the vascular system of the brain. The only class of remedies respecting the *modus operandi* of which any question can be raised, are those which produce what is termed counter-irritation; and perhaps the doubt which exists in this instance arises from the obscurity of the subject. It is very generally supposed, and perhaps correctly—at least it is very difficult to find any other hypothesis on the subject that is more probable—that the means of counter-irritation, such as rubefacients, vesicatories, and issues, produce their effect by lessening an hypoplethoric state of the vessels in internal parts, and that they bring this to pass by increasing the fullness of the vessels in surfaces to which they are immediately applied. There are facts which it is very difficult to reduce under this sort of explanation; as, for example, the relief obtained in cases of pneumonia or of bronchitis, by means of blisters applied to the parietes of the chest, there being in these instances no continuity of structure that might render the proposed explanation in some degree intelligible. On the other hand, there is little doubt that such remedies are most efficacious when they are applied over surfaces nearly in juxtaposition with the seat of disease; and this fact, if not called in question, goes far towards establishing the notion before alluded to as to their mode of operation.

A case has lately occurred in my practice at the Bristol Infirmary, which strongly exemplifies the efficacy of the treatment which I have recommended, and which I have fortunately an opportunity of bringing before the Medical Section in the most convincing way. A youth, aged about eighteen, came into the Infirmary, labouring under complete amaurosis, which had been coming on gradually for a week or ten days before his admission. At that time it had become so complete, that vision was entirely lost, and the pupils were totally insensible to light even when the rays of the sun were suffered to fall immediately into the open eyes. At first he was freely and repeatedly bled from the arm and temporal artery, had leeches applied to the scalp, blisters to the nape of the neck, and took calomel so as to render his gums sore. Finding that no effect whatever was produced by these measures, I gave up the expectation which I had at first entertained of his recovering sight, but was resolved to give the remedies a complete trial. I ordered him to be bled *ad deliquium*. This took place after a small quantity of blood had flowed from his arm while he was in an erect posture. After a few days (he was still perfectly dark) an incision was made over the sagittal suture from the forehead to the occiput. It was filled with peas. In three or four days, precisely at the time when suppuration began to take place, the patient declared that he perceived light, but was scarcely believed, since the pupils were still widely dilated and quite insensible to a strong light. In the course of a few days it was quite evident that he saw—he could tell when two or three fingers were held up. For some weeks the iris was still quite irritable, though vision had become in a great degree restored.

The subsequent treatment of the case consisted chiefly in occasional leechings, purging, and low diet. When the issue healed, which was not till it had been kept open for some months, a seton in the neck was substituted: under this treatment the case has terminated in a complete recovery of the blessings of sight.

Dr. O'Beirne stated, that the treatment was perfectly new to him, and he should feel himself amply compensated if he derived no other benefit than hearing this paper from his attendance at the British Association.—Dr. Carson stated, rather as an objection, that if an animal were bled to death, the same quantity of blood would be found in the cranium, and that the doctrine of determination of blood to the head was unfounded, and frequently led to great errors in practice.

The second paper read was by Dr. Houston, on a human fœtus without heart or lungs. Several drawings were exhibited, and the reading of the paper led to a short discussion, in which Drs. Prichard, Carson, O'Beirne, Macartney, and Mr. Carmichael, took part.

The third paper was by R. Carmichael, Esq., on Tubercles.—Mr. Carmichael commenced with some remarks on the great prevalence of these formations, and then proceeded to detail their appearances according to Laennec and Carswell. He adverted to the use of the term Scrofula, which he considered a cloak for ignorance; and, having stated that Drs. Todd, Clark, and Carswell, believe in the identity of Scrofula and Tubercle, disputed this position, and likewise their opinion, that tuber-

cles are inorganizable deposits. Among other objections he urged the inconsistency of representing enlarged cervical glands and pulmonary tubercles as identical, since it is well known that the former may be injected, but not the latter; and of maintaining the non-inflammatory origin of tubercles, together with the view, that these bodies are lifeless matter; since, if such is their nature, they must excite inflammation in the tissues which contain them. He allowed, however, that the scrofulous constitution disposes to tubercles, but only in the same manner as to cancer.

Mr. Carmichael next adverted to the generally recognized connexion between Scrofula and disordered digestion, and claimed the priority of this observation by reference to a work which he published in 1810. He then proceeded to argue, at considerable length, in favour of the parasitical origin of tubercles, pointed out the absence of vascular communication between these bodies and surrounding parts, and observed, so long as the former retained their vitality, no inflammation takes place. The author declared his opinion, that Carcinoma must likewise be arranged among the Entozoa; and, having indicated the division of a cancerous formation into a medullary and a cartilaginous portion, assigned to the former an independent vitality, the latter being only a barrier which nature sets up against the parasite, and observed, that the containing cyst belongs to the surrounding tissue. The cartilaginous portion he stated might be injected, but not so the medullary tubercles, which he considered more allied to Carcinoma than to Scrofula. Having spoken of a difference between Fungus Medullaris and Fungus Hæmatodes, he proposed to arrange the formations which had passed under review, as constituting four species of Entozoa:—1. Tubercles found in the lungs. 2. Tubercles found in the abdominal organs. 3. Fungus Medullaris and Fungus Hæmatodes. 4. Carcinoma.

Mr. Carmichael next considered the exciting causes of Tubercles, and concluded by urging, that practitioners must direct their attention rather to the prevention than the cure of the disease.

A short discussion followed. Some objections were brought forward by Dr. Macartney, and answered by Mr. Carmichael.

August 24.—Dr. Macartney read the report of the Dublin Committee, appointed by the British Association, ‘On the Motion and Sounds of the Heart;’ and the report of the London Committee, ‘On the Sounds of the Heart,’ was read by Dr. Cladding. Dr. Symonds then read a letter from Dr. Spittal, of Edinburgh, stating, that in consequence of the death of Professor Turner, and the absence of one of the members on the Continent, the Committee had not been able to prepare a report. After that, a paper was read, ‘On the Gyration of the Heart,’ by F. A. Greeves. The following is an abstract.

1. Muscular fibres can act as levers without a *solid* fulcrum, if there be another set of fibres set at an angle, and contracting simultaneously.
2. A hollow organ may be *dilated* by the contraction of such an arrangement of fibres, if, in contracting, they become more parallel to a plane passing longitudinally along the axis of the organ.
3. That there are two spiral, two longitudinal, and one diagonal set of fibres in the heart, interlacing each other.
4. The ventricles gyrate incessantly to and fro upon their axes.
  - a In systole or involution, as the left hand pronates.
  - b In diastole or evolution, . . . . . supinates.
5. The double spiral curve of the two great arteries forms a compensating and regulating movement, causing
  6. i. A diminution of friction.
  7. ii. Steadiness and celerity of motion, on the principle of the tilt hammer.
  8. iii. An isochronous action, on the principle of the balance wheel and spring.
  9. iv. The progression of the whole heart.
10. That the function of the auricle is to maintain the equilibrium of the venous system.
11. The first sound is produced by the sudden tension and sudden change of gyration occasioning vibration of the ventricular walls. The second sound is from the flapping of the sigmoid valves.
12. The impulse is partly caused by the progression, partly by the atmospheric pressure, and chiefly by the left ventricle, first *gyrating into the proper posi-*

tion to do so, carrying the apex against the thorax with a force equal to the difference of strength between the right and left ventricles

13. *Bruit de soufflet in the heart* is the result of increased friction on the pericardium.

Mr. Greeves gave the particulars of many experiments, in illustration of, and to enforce, his somewhat novel theory.

Dr. Carson and Dr. Williams expressed their opinion that there was nothing in the facts stated that ought to influence or change the received opinion in regard to the dilation of the heart, which appeared sufficient to explain the phenomena

The President then read a communication from Dr. Brewster, entitled, 'A singular Development of Polarizing Power on the Crystalline Lens, after Death,' and also a letter from the same, 'On Cataract, or a disease resembling Cataract,' which, if resisted in its earlier stages, the Doctor believed, from personal experience, might be overcome. For detecting this disease, which generally manifested itself between forty and sixty, the Doctor gave instructions, and further stated, that by attention to diet and regimen, and taking care not to study by night, he had been cured in about eight months. If the affection had not been checked in time, he entertained no doubt it would have ended in cataract.

Dr. Carson then communicated some 'Observations on Absorption.' After giving a short but perspicuous history of the discovery of the absorbent system, Dr. Carson proceeded to examine the question, much agitated at present, whether the veins act as absorbents. He contended that the veins only take up substances external to the vascular cavity which they form with the artery after they have been divided. He attempted to prove, that in all the instances in which the veins were found by the French physiologists to absorb, these veins had been injured; but that the lymphatics, lacteals, and imbibers of the lungs, took up substances from sound surfaces. The recrementitious part of the system requiring to be discharged, found access into the veins; substances retained for the nutriment of the body were conveyed in the other class of absorbents. Hence two kinds of absorbents—one destined for nourishing, and the other for carrying off the waste of the body. In states of disease, and often in health, the lymphatics and lacteals become the vehicles of substances not fit for the repair of the system or for supplying healthy and necessary fluids. The recrementitious matter, or the waste of the body, entered the veins at their extremities, at the point at which they received the arterial blood, and converted that blood from the vermilion to the purple colour. This recrement was discharged in the form of air and vapour, by the mouth, in expiration. The blood having been subject, in the pulmonary arteries, to a diminished atmospheric pressure, and such an increase of heat as to cause ebullition under that pressure, discharged such substances as were disposed, in that condition, to assume the gaseous form. This is contended to be the source of all the air that is expired. The renovation of the substances constituting the animal frame, the author contends, is far more rapid than is generally believed. Thus, the process of putrefaction goes on more rapidly during life than it does after death; but the products are carried out of the living body before they become offensive to the senses. The recrementitious matter which enters the extreme veins, and changes the colour of the blood, serves an important part in promoting the motion of the blood. It forms a tide, urging the blood along the cavity of the veins, and prevents those vessels from being collapsed by the pumping of the heart. When the lymphatics, lacteals, or imbibers of the lungs, absorb matters unfit for entering the arterial circulation, there exists a process for discharging these substances before they reach the left side of the heart. They pass into the venous blood, and are in the pulmonary arteries subjected to the same depuratory process that the blood itself is subjected to, and are discharged by the breath.

Another important class of absorbents is constituted by the imbibers of the lungs. These are vessels which form a communication between the branches of the windpipe and the pulmonary veins. All the air that is taken in by breathing, is conveyed through these vessels directly to the blood. Hence the source of animal heat, and of a considerable share of the nourishment of the body. The air is made to enter the pulmonary veins in consequence of the elastic fibres of the windpipe resisting prolapsion when the chest is enlarged, and would form a vacuum in the veins, which is prevented by the air passing into their expanding cavity through

the imbibers. The author explained how the air that is inspired, and that which was expired, were mixed, though they passed through the same channel.

*August 25.*—Dr. Hodgkin read a paper on the connexion between the veins and absorbents. He observed, that the Committee appointed to investigate this subject had been fortunate in procuring subjects, in whom the lymphatic system had been well developed. There was great difficulty in injecting the lymphatics, it requiring a sharp eye and a steady hand to be anything like successful. Mercury, injected into the lymphatics, will sometimes pass off by the veins, and some believe that there is a natural communication between these structures. In injecting subjects at Guy's Hospital, it was found that the mercury passed easily from the glands into the veins, in very recent subjects. The idea of transudation through the sides of the vessels, he said, must be rejected in mercurial, though it probably took place in aqueous injections.

Mr. Bracy Clark, in injecting the vessels in a horse, found a direct communication between the receptaculum chyli and the lumbar veins. If water is thrown into the arteries, it will almost immediately fill the lymphatic vessels.—Dr. Hodgkin had seen lymph flowing in the thoracic duct, tinged with blood.—Mr. King had observed the fact, that the thyroid gland contained a number of small cells, which were filled with a peculiar fluid; and it is almost certain that there is a communication between these internal surfaces and the lymphatics of the organ.—Dr. Hodgkin gave it as his opinion, that the communication between the veins and lymphatics occasionally happened, but that they were not found at will.

Dr. Reid, of Dublin, then read to the Section a paper, entitled, 'A short Exposition of the Functions of the Nervous System.' He observed, that the anatomical examination of the human frame brings to view a complicated structure, consisting of a great variety of organs. These are held in reciprocal communication by means of nerves, for, upon the division of nerves going to supply any part, that part is immediately deprived of all vital influence upon the rest of the frame. It becomes itself then subject to the laws of inorganic matter. The nerves, therefore, being the means of communicating vital influence to all the parts, however minute, of the human body, it becomes necessary to examine the functions of these substances, and how they are distributed through the general frame, in order to enable the physician justly to appreciate the actions of the organs, whether morbid or healthy, while life continues.—In studying the phenomena produced by the nervous structures, it will be found, that all phenomena are not common to all nerves; but that some phenomena may be traced to the influence of certain nerves exclusively, while other phenomena are found to be controlled by a different system. Thus, if three nerves are found attached to an organ, one of these being divided, the organ may be deranged in its function of assimilation; another nerve being divided, the power of motion may be extinguished; and the third being cut, the organ may be deprived of sensation. The human frame being composed of a number of different organs, and the actions of all these being necessary to the general economy of the animal, it is evident there must be some medium of reciprocal communication, so as to keep up that harmonious activity throughout the frame, which constitutes health. The nerves form this medium of communication, and it will be found that these parts of the animal structure are distributed into three natural divisions. The first (said Dr. Reid), which I have denominated the ganglionic system, consists of that series of ganglion formerly denominated the sympathetic nerve and its appendages. Professor Panizza, of Pavia, has demonstrated the incorrectness of the supposition, that the branches of the first cervical ganglion of this system, which ascend along the carotid artery, and, entering the cavernous sinews, communicate with the sixth pair and enlarge them. He says, the branches of the intercostal or sympathetic nerve are merely entwined round the sixth pair, and may be detached without injury to either. It therefore appears, that these branches are sent up from the central system of ganglions to perform their functions in the parts to which they are distributed, and are actually not derived from the brain, but are sent to perform their peculiar office in the brain and the adjacent parts. This system of nerves appears to be the first formed, and seems coeval with the *punctum saliens*. It thus becomes intimately connected with the organs of circulation, forming that nervous net-work around the vessels, which follows their most minute ramifications. As the gangli-

onic system of nerves differs from the cerebral and spinal nerves in appearance, properties, and distribution, it is natural to infer, that its functions also differ. Weber has observed, that the vascular system is developed in proportion to the sympathetic nerve, and seems to imply, that the greater power of reproduction in organized beings, apparently destitute of nervous matter, is to be attributed to the nervous matter diffused through them.

At the close of Dr. Reid's paper, a discussion ensued, respecting the efficacy of pressure on the peritoneum in cases of epilepsy, which Dr. Reid stated he had never known to fail in recovering the patient.

Dr. Macartney exhibited to the members a portable Probang.

The last paper was on the muscles and nerves of the eyeballs; but it would be unintelligible to our readers, if given unaccompanied by the diagrams by which it was illustrated.

*August 26.*—Mr. Adams, one of the surgeons of the Richmond Hospital, Dublin, gave an oral account of the morbid appearances he had noticed in different joints of the body, the results of a disease which, for want of a better name, is called chronic rheumatism. He stated that the profession were now quite familiar with this disease as it appeared in the hip joint, which is fortunate; for heretofore there can be no question but that both in the living and the dead the disease was confounded with morbid affections totally different, and requiring different treatment. The shortening of the whole limb, and eversion of the foot, made the affection, in its external characters, much resemble the fracture of the neck of the thigh bone, and when the actual bones are examined after death, the resemblance these bear to the fracture alluded to, was, on a superficial examination, very striking, and accounted for these mistakes having been made over and over again. But the external signs of this disease are now well known, and the ivory deposit in the place of the cartilage removed, and the complete filling up of the bottom of the acetabulum or socket of the hip, by a hard osseous deposition, render the distinction easy to the pathologist. This distinction, even in a pathological point of view, is of more consequence than might at first sight appear; for the anatomical character of the head and neck of the thigh bone, in the morbus coxæsenilis, are so similar to the case in which it might have been imagined that an intra-capsular fracture of the cervix femoris had united, that the mistake has been frequently made, and erroneous inferences have been drawn, and false hopes encouraged, as to the practicability of effecting a reunion of the fractured neck of the thigh-bone. From viewing these cases, the result has been, that the mild, and he would say merciful mode of treating advised by Sir A. Cooper, of the intra-capsular fracture, (the subjects of which are generally old and debilitated,) has been abandoned, and splints and bandages applied, which have created irritative fever, and even death.

Mr. Adams then produced specimens of the same disease in the shoulder joint—showed how the glenoid cavity of the shoulder blade became enlarged, as well as the head of the humerus—and further pointed out, that almost invariably the loss of the tendon of the biceps was to be noticed, analogous to the uniform loss of the internal ligament, when the hip was affected. The existence of foreign bodies on the joint was also stated as a common occurrence in these cases; the effusion of synovial fluid in increased quantity—the atrophy of the deltoid muscle—the adduction towards the middle line, by the pectoral muscle—and the apparent slipping in and out of the head of the humerus, gave the idea of what is called a partial luxation of the humerus. Mr. Adams took occasion here to explain what was the real case of partial luxation of the humerus; he referred to the case of dissection found at p. 305 of Sir A. Cooper's work on Dislocations, and brought forward to illustrate the pathology of partial luxation of the humerus, which, however, in his opinion, was not really a partial luxation, but this chronic disease of the shoulder joint, called chronic rheumatism, or "rheumatic gout." Mr. Adams took occasion to apologize for thus alluding to Sir A. Cooper's labours, who he was satisfied had done more to enlarge our knowledge of the accidents the joints are liable to, than any other individual living; but by many dissections and observations, Mr. Adams felt satisfied that the case of partial luxation of the humerus, as described by Sir A. Cooper and others, required to be verified further by dissections before the entire assent of the profession should be given to it; and he felt quite convinced that the

case described by Mr. Patey in Sir A. Cooper's valuable work (page 305, new edition), and represented in an engraving, plate xxii, figure 2, is a true specimen, and an admirable illustration of the disease under consideration. Mr. Adams here showed several specimens of this disease of the shoulder.

Mr. Adams next exhibited examples of what he attributed to a similar morbid action which had taken place in the elbow joint; here also the size the bones had attained was considerable; there were numerous foreign bodies, from the size of a pea to that of a small walnut; some of them were cartilaginous, some bony—the articular cartilages had been removed from the ends of the bones, parallel grooves in the direction of flexion and extension were shown, and in these, and in their neighbourhood, an ivory deposit was shown. Two specimens, from two different subjects, one in the wet state, the other dry, were produced; another specimen showed the ivory enamel on the head of the radius; its increase of size was noticed, and a depression was formed to accommodate its rotation on the humerus; and, strange to relate, in two cases, a dimple-like depression was formed on the globular head of the radius, and a round ligament like that of the femur was produced. The same disease was also exhibited in the knee joint; similar enlargement, parallel grooves in the line of flexion, foreign bodies, vascularity of the synovial fimbriæ, were all noted as in the elbow joint, removal of cartilage, and substitution in its place of an ivory deposit. The hip joint appeared most frequently affected, the knee and elbow next, the shoulder and wrist next; in short, Mr. Adams has seen the same disease in every joint; the fingers also become distorted by it. It does not confine itself to the *heads of the bones*, but the same, or a similar morbid disposition to deposit a porcelain-like matter existed even in the *interior of the bones*, the substance of the radius, the interior of the head of the femur—the lower jaw itself. A drawing was here produced of this disease in a woman aged thirty, who was at this moment under treatment in the Richmond Surgical Hospital, whose hand and fingers were distorted, adducted, or drawn to the inner side of the forearm, in that characteristic manner which at once reminds us of the affection of the system of the joints, tendons, &c., called chronic rheumatism. The lower jaw in her case is so distorted, that the chin passed the middle line at least one inch to the left side.

The importance of distinguishing this painful, though not dangerous disease, from all others, was pointed out, as well as the danger of having recourse to blisters, setons, and incisions, all of which he had known proposed, and some *practised*. The coexistence of numerous foreign bodies with this morbid condition of the bones of the joints, the cartilages, and the vascular condition of the synovial fimbriæ, was much dwelt upon; and the danger and folly of attempting the excision of foreign bodies when these form such a *small part* of the disease, was pointed out.

Although Mr. Adams felt assured that many of the observations he was now making to the Section of Medical Science, and proving by the actual exhibition of specimens, were new, he did not mean to assume merit to himself; but except he showed they were new, he could scarcely be excused for delaying the Section with them. As far as the hip joint is concerned, he must acknowledge that even so far back as the period when he commenced his professional studies, the external signs of this disease were well known in Dublin; and the anatomical character, as to the ivory deposit, and thickening of the capsular ligament, had been for many years alluded to in the clinical lectures delivered in Dublin, and were more clearly pointed out by his young friend, Mr. R. W. Smith, in his account of this disease in the 6th volume of the Dublin Medical Journal. However, a beautiful engraving of this disease will be found in the *Museum Anatomicum* of Sandifort. Sir Benj. Brodie, in his work on the Joints; Mr. Key, in the 18th volume of the *Medico-Chirurgical Transactions*; Lobstein, in his *Pathological Anatomy*, tom. ii., have all very briefly alluded to this disease, as well as Benjamin Bell, &c.; but Mr. Adams has not seen anywhere so complete an account of this affection in all the bones as its importance would appear to him to demand. Cruvelhier, of Paris, has certainly entered more fully than any other writer into its pathology and pathological anatomy, and has denominated this disease, *Unre des cartilages articulaires*, thus giving to the disease “a local habitation and a name.” But the name would confine the disease to the cartilages and to the joints; but Mr. Adams had shown that the irritation, whatever it be, or whatever name you give to it, extends to all the structures



around the joints, and the shafts and centres of the bones themselves. Mr. Adams wished that he could say something satisfactory as to the treatment of this disease, but he confessed that upon this head he had not much that was satisfactory to communicate.

Mr. Adams next brought forward a very fine preparation—both of the lower extremities of an individual, who had died of cancer, who sixteen years before had been admitted into the Richmond Hospital by the late Mr. Todd, on account of a popliteal aneurism in his left ham; the artery was tied in the thigh. In three weeks the man walked out of the hospital perfectly well, never having had a bad symptom, nor his pulse ever having risen above 80 in a minute. The case, so far, is published in the 3d vol. of the Dublin Hospital Reports. In three years subsequently to this, the poor fellow applied again to the same hospital, and the late Mr. Todd again performed a similar operation, which was followed by a similar happy result, and he never suffered any further inconvenience in his limbs, having been perfectly cured of his aneurisms. In April last, when Mr. Adams was prescribing for the Dispensary patients at the Richmond Hospital, this man, M'Owen, applied to him; it was too plain, from the emaciated appearance of this once athletic man,—from his peculiar or pale straw-coloured hue, and expression of countenance, that some bad organic internal disease had taken possession of him; and a few inquiries made it clear that a cancer of the stomach, near its œsophageal orifice, existed. He was advised to return to the country, as little or nothing could be done for him: but now being about the age of forty-two, and full of hope that his life might be prolonged, and of confidence in the hospital where he was twice before relieved, he returned, and demanded admission. Everything was done that could be thought of to palliate his sufferings, but in vain. Upon dissection of both limbs, which was done by his friend Mr. R. W. Smith, the learned curator of our Museum, and to whom is due the merit of this splendid preparation, it was found that the main artery of the limb on each side was interrupted only for half an inch in one inguinal region when tied, and for a quarter of an inch in the other; and in each popliteal only two inches converted into a ligamentary chord; the circuitous channels, which acted as supplementary canals to carry round the blood when obstructed in the main artery, were seen much enlarged, and were remarkably tortuous. The case differed from most others, in the circumstance of the canal of the main artery having been so much restored; the case showed in a strong light the great advancement which the science and the practice of surgery had made, and the debt (*humanly speaking*) which was due to the genius of John Hunter, who first pointed out the method of treating popliteal aneurism, by including the femoral artery in a ligature at a distance from the diseased artery. The old operation was so painful and so dangerous, that the late Mr. Percival Pott was known to have stated, that were he the subject of this disease, he should much prefer to submit to amputation of the thigh, than to undergo the pain and risk of the operation for popliteal aneurism practised in his day. In this case, by two simple incisions, which caused but little pain and no fever, he was twice perfectly cured of the most formidable disease which can afflict humanity.

Mr. Hetling, of Bristol, then read a paper, 'On a new Instrument for the removal of the Ligature of Arteries at pleasure.'

Mr. Gordon, also of Bristol, then exhibited some anatomical models, carved by himself, in ivory.

The last paper read, was 'On the Chemistry of the Digestive Organs,' by Robert D. Thomson, M.D. The author began by drawing attention to the necessity of admitting chemical action as an important agent in digestion, because, inasmuch as every change in the position of the ultimate particles of matter is a chemical or electrical change, so the conversion of food into chyme and its assimilation must fall under this head. Dr. Thomson divided the consideration of the subject into—I. Chemical state of the stomach, first, in health; and secondly, in disease. II. Chemical state of the mouth and œsophagus, first, in health; and secondly, in disease.—I. First, He remarked that our most eminent physiologists had completely overlooked the experiments of Dr. Prout and others, which establish the fact that in health the stomach contains a quantity of free muriatic acid. He referred to the recent experiments of Braconnot, who had found a great quantity of this acid in the stomach, and who had determined by very satisfactory experiments that no lac-

tic acid was present. Dr. Thomson detailed an experiment, in which he had succeeded in converting muscular fibre into a substance exactly resembling chyme, by digesting it in dilute muriatic acid, on the sand bath, during ten hours, taking care to keep the mixture as nearly as possible at the temperature of the human body. He, therefore, drew the conclusions:—first, that the stomach, in a state of health, when excited by stimulants, contains a quantity of free muriatic acid; and second, that dilute muriatic acid is capable of producing by digestion, at the temperature of the human body, a substance similar to chyme in its physical properties. From which it may be inferred that free muriatic acid is an important auxiliary in the process of digestion. Second, with reference to the state of the stomach in disease, Dr. Thomson observed that the most common form in which chemical reagents were affected, was by a redundancy of acid, occasioned by the introduction into that viscus of acid fruits and vegetables, which gave rise to fermentation, and the symptoms of heartburn, a very familiar complaint. He next proceeded to describe the only other form of disease of the stomach, which was indicated peculiarly by the action of re-agents, by an alkaline state occurring in the disease commonly termed *pyrosis* or *water-brash*. Having investigated this disease very carefully with regard to its chemical nature, he showed that it proceeded from the diseased state of the secretion in the stomach,—alkali having taken the place of the free acid. By chemical analysis he found that the alkali was ammonia, and probably, also, a little soda was present. Having discovered this very remarkable and important fact, the practice consequent upon it was evident, and the result proved of the most satisfactory nature; he found that the administration of acid gave immediate relief. If the case was of a chronic nature, he prescribed anodynes,—as conium and hyoscyamus, in order to act directly upon the nerves, should they have been long subjected to the action of the diseased secretion. Dr. Thomson detailed the particulars of several cases. In one instance, a female had become so much emaciated, in consequence of the disease having existed daily for three months,—the patient ejecting by the mouth, in the course of the day, not less than a pint of tasteless fluid. Dr. Thomson immediately prescribed for her aromatic sulphuric acid, and in the course of two days, when he next saw her, the disease had entirely disappeared; nor was she again affected by it. The author stated that he had been unable to detect any general laws, which would seem to regulate this complaint. He had met with it in all constitutions and ages, and equally as abundantly in England as in Scotland. Butter and all oleaginous substances were liable to produce it, as well as the simultaneous use of apples and porter, at least in some individuals.

II. First, Dr. Thomson next proceeded to detail the results of his experiments upon the chemical state of the fluids of the mouth during health, which, in confirmation of the experiments of Donn , of Paris, he had found to be alkaline, and sometimes neutral. He noticed the experiment of Donn , which would appear to prove that the mucous membrane of the alimentary canal (which is alkaline) and the skin (which it is well known is acid) constitute a kind of Voltaic pile; for when one of the poles of a delicate galvanometer is placed in contact with the mouth, and the other with the skin, very distinct electric currents are produced, which cause the needle to effect  $15^{\circ}$ ,  $20^{\circ}$ , and sometimes  $30^{\circ}$ .

Second, the author stated that he had found the mouth indicating an acid re-action whenever inflammation existed in any of the membranes in connexion with it, as in laryngitis, pleuritis, bronchitis, gastritis, and enteritis, and in other diseases of an inflammatory nature. He directed the attention of medical men to this fact, as a most important feature in the diagnosis of such diseases. He stated that he had extended his observations to all inflammatory diseases, and had found, uniformly, that inflammation of mucous and serous membranes in all parts of the body, is attended by the secretion of free acid. Hence the scientific method of removing this source of irritation in such diseases, viz., by the local application of alkaline solutions, as in erysipelas, inflammation of the urethra, &c. He stated also that he had examined the chemical composition of the membrane deposited in croup, and had found its principal constituent to approach nearer the character of albumen than any other animal substance, which would add some weight to the opinion of Donn , that morbid products derive their origin from the free acid secreted on the surface of the membrane upon which the product is deposited.

*General Meeting, August 27.*—The Committee of Recommendations propose the following grants to the Section on Medicine of the Association.

50*l.* for renewed grant to the committees appointed to investigate the subject of the anatomical relations of veins and absorbents.

50*l.* for the renewal of a grant to the committees appointed to investigate the subject of the motions and sounds of the heart.

25*l.* for researches into the chemical constitution of the secreting organs; Drs. Roget, Hodgkin, and Turner, and G. O. Rees, Esq.

25*l.* for investigations on the physiological influence of cold on man and animals in the Arctic regions; Mr. King.

25*l.* renewed grant for the investigation of the effects of poisons on the animal economy; Drs. Roupell and Hodgkin.

25*l.* renewed grant for the investigation of the pathology of the brain and nervous system; Drs. O'Beirne, Green, Macdonald, Messrs. R. Carmichael, R. Adams, and O. Smith.

25*l.* for the investigation of the physiology of the spinal nerves; Drs. Harpey and Broughton, and E. Cock, Esq.

*Practical Observations on Strangulated Hernia and some of the Diseases of the Urinary Organs.* By JOSEPH PARRISH, M.D. Philadelphia. Edw. C. Biddle. 1836.

Dr. Parrish informs us, in the preface to his present work, that he has been labouring in his vocation, as a daily practitioner, for full thirty years; and that what he now commits to the press is the result of experience and part of the records of many important cases which he has preserved. During the above period he has been, successively, a Physician to the Philadelphia Dispensary; on the occasion of one of the visitations of Yellow Fever, resident physician at the Hospital destined for the purpose; and subsequently, he has served for a term of years as surgeon to the Almshouse Infirmary and to the Pennsylvania Hospital. In private practice his opportunities for observation have been numerous and diversified. Let us add to this, his pains-taking to discover, in all cases, the real state of things; his rigid conscientiousness in noting and narrating the facts which were observed by himself, or which were transmitted to him by persons worthy of credence and confidence: and we present, in a few words, the strongest possible claims on the respectful attention of his medical brethren in his favour.

Amidst the crowd of ephemeral essays, disquisitions and speculations, which so continuously succeed each other, and which are sent forth by the young, the ardent and the inexperienced, and sometimes even by the illiterate, one cannot but regard with peculiar pleasure the candidly recorded lessons of age and experience. It is not necessary, either for the permanent reputation of their author, or for the instruction of his readers, that they should be all of equal merit. The favourable reception to which they are entitled does not imply an entire adoption of all the opinions which they contain, nor of the inferences which the writer deduces from them. Still less should we require them to be clothed in a highly ornate or elaborate style. Inequality in the interest of the subjects is a strong proof of their having been of actual occurrence and faithfully recorded; since art and system would prompt to a selection, and a more sustained elevation. If the reader occasionally demurs to the entire soundness of view which prompted particular modes of practice, in the work before us, he is furnished, at least, with all the evidence on which the author

grounds his opinion in the case, and has the matter distinctly laid down, either for his imitation or avoidance. A great and peculiar advantage of a monograph, with cases, is the vivid picture which it presents of the disease, thus preparing the young and inexperienced practitioner for alternations and difficulties, embarrassments and unexpected results, which he cannot find in the necessarily abbreviated narrative and description of a purely systematic work.

The subjects treated of by Dr. Parrish are divided into two parts. The first is on STRANGULATED HERNIA: the second on DISEASES OF THE URINARY ORGANS. The descriptions of morbid structure and of symptoms, and the directions for their removal, are given plainly and earnestly; the aim of the author being, evidently, to make himself understood, rather than praised by the language he uses. The first chapter treats of the *Difficulties in the Diagnosis of Hernia*, under the three sections of *Hernia mistaken for Colic*, *Deceptive Symptoms*, *Diseases resembling Hernia*. In the second chapter, headed TREATMENT OF HERNIA, are presented, under the first section, an enumeration of the various *Means of Reduction employed before the Operation*; under the second section, is a description of the *Operation for Inguinal and Femoral Hernia*; under the third, an inquiry into the *Propriety of opening the Hernial Sac*; the fourth, the *Difficulties of opening the Hernial Sac*; the fifth, the *Difficulty of Reduction from Inflammation*; the sixth, *Symptoms of Strangulation after Reduction by Taxis*; seventh, *Symptoms of Reduction after Operation*. Chapter third is on the DIAGNOSIS OF MORTIFICATION:—We omit to specify the sections. Chapter fourth is ON THE MANAGEMENT OF MORTIFIED BOWEL. Chapter fifth is on ARTIFICIAL ANUS. ENTERO-EPIFLOECLE is the subject of the sixth Chapter; CONCEALED HERNIA, of the seventh; and UMBILICAL HERNIA, of the eighth. Chapter ninth treats of STRANGULATION WITHIN THE ABDOMEN; Chapter tenth of ANOMALOUS CASES. The Conclusion is in the shape of COROLLARIES, or, as they might be termed, Aphorisms.

We have given the heads of the subject matter contained in the first part of Dr. Parrish's work, or that on Hernia, believing that they will properly stand in the place of minute and elaborate criticism; and that they will, in connexion with what we have already stated, respecting the confidence to which the author is entitled by his age, experience and candour, induce our professional brethren to engage in an attentive perusal of its pages.

The author, very properly we think, hints at the too great anatomical nicety in the description of Hernia. The object of such refinements is good; but the effect is to mystify and bewilder the student and young operator. As well might we argue from the appearance of the thyroid gland in health, the nature of goitre, or of the natural cellular tissue and fasciæ of the legs, the changes in elephantiasis, as to pretend to demonstrate the fasciæ mei with in hernia, on the healthy parts.—“The real seat of stricture detached from every other consideration appertaining to the subject,” and that which Dr. Parrish deemed of primary importance to demonstrate to his pupils, is, in femoral hernia, “the reflected edge of Poupart's ligament,” which “may with great propriety be called Gimbernat's ligament, because this surgeon first called the attention of the profession to this particular structure.”

Of the importance, in the author's opinion, of early knowing whether hernia be present, and of the form of disease which so frequently gives notice of it, and yet is referred to other causes, we may have some idea from his laying it down as an axiom, that *colic ought always to be associated with the idea of strangulated hernia*. The passage of feces and flatus after strangulation, from the lower bowels, is point-

ed out among the deceptive symptoms which might mislead the professional attendant into the belief that there was no stricture.

An account of the means of reducing strangulated hernia is closed by some very salutary and very necessary cautions respecting *taxis*. "For my own part," says the author, "I am inclined to consider *taxis* in hernia, and crepitus in fracture, as two unhappy words. They are so intimately associated with the idea of mechanical force, that the poor patient may be subjected to an increase of pain and danger by their application to practice." "Now let common sense speak on this subject. What can be more irrational than to apply force to a tender bowel already in a state of inflammation? What more likely plan to hurry on the bowel to mortification, and the patient to death? I lay it down as a principle that all force in such a case is improper—*arte non vi*." The Doctor tells us that on occasions he has not been restrained by professional pride from requesting patients to try their own skill in the reduction of rupture. "An ignorant servant-woman was violently attacked with a small strangulated femoral hernia. When the patient was in a state of relaxation, and at a favourable moment for the trial, I requested her to 'try to put it up;' and I carefully watched her movements. She laid upon her side, inclined the trunk forward, drew up her knees, and flexed the thighs upon the pelvis; thus causing complete relaxation of the abdominal muscles and fasciæ, and, by her own efforts, reduced the incarcerated bowel."

Desault is quoted on the great danger of immoderate efforts in applying *taxis*, the practice of which he condemns in almost every instance; since, as he alleges, the bruising and other injuries inflicted on the bowel by the surgeon, in such attempts, may render the state of the patient as critical after the reduction, when accomplished, as it was before the reduction. This celebrated surgeon says, "you may always hope for success in a hernia which has not been touched before operating." He often succeeded completely in operating upon patients who had not been tampered with, even after the strangulation had continued for four or five days; but when strong efforts had been made to reduce the hernial contents, he almost constantly met with a fatal result. The inference from all this is, that great care should be taken in the manipulatory efforts of *taxis*, not to bruise or derange the circulation in the strangulated intestine. We have repeated the views and directions of Dr. Parrish on this part of his subject the more readily, because they ought to be constantly present to the mind of the general practitioner, for his guidance anterior to an operation, and with the hope of either rendering it unnecessary, or, if undertaken, of diminishing the chances of failure.

Touching the time when the operation should be performed, the author says:—"The longer I live, and the more I see of strangulated hernia, the more firmly I am convinced of the correctness of the observation of the distinguished Hey, given to us, as the result of a long life of experience. 'I have often had occasion to regret,' says he, 'that I performed the operation *too late*, but never that I performed it *too early*.'"

It is Dr. Parrish's uniform practice, before this, as in most other operations, to give an opiate, either by the mouth or rectum. The details of the method of performing the operations for inguinal and femoral hernia are full and explicit.

He is decidedly in favour of opening the hernial sac, and intends never to perform the operation without so doing. The seat of stricture may be in the hernial sac itself, and there may be other concealed mischief in it, which will cause death.—"The incarcerated parts may be returned, while the symptoms of strangulation

may go on without the slightest mitigation, and a fatal result will unfold the real character of the case."

The difficulties of opening the hernial sac, from its being concealed by a coagulum of blood, and from the distinction between Sac and Intestine being confused by gangrene, and adhesion of omentum are pointed out.

Under the head of '*Symptoms of Strangulation after reduction by Taxis,*' the author states, that his chief reliance, for their removal, is on mercury introduced into the system in exceedingly minute portions. A case is given to show the persistence of symptoms of strangulation after an operation, which resulted favourably. Castor oil and opium, by the mouth, and injections of warm water, thrown up through a large flexible catheter, were used: also calomel in divided doses, at first a quarter of a grain every half hour, and afterwards one or two grains every hour, until twenty-five grains had been given, stimulating fomentations of spirits of turpentine to the abdomen, enemata of laudanum and assafoetida. Afterwards, bleeding, the warm bath, and anodyne injection, and calomel repeated, were had recourse to. A compound powder of jalap was given every hour, in sweetened mint-water. Chicken-water and mutton broth allowed in succession. After a period of eight days of constipation, feces were discharged; the patient, whose gums had become sore, felt relieved, and soon convalesced. The hiccough was a troublesome symptom, and recurred frequently.

We are taught caution in prognosis, by some remarks of the author on the constitutional evidences of mortified bowel. He has seen cases in which extensive mortification has taken place, without the occurrence of the symptoms commonly deemed characteristic; and, on the other hand, the usual symptoms of mortification present, without the bowel being actually dead.

A case of strangulated femoral hernia, with apparently mortal symptoms, and considered by the physicians in attendance as utterly hopeless, is given, in which a cure was effected, or at least followed, the practice adopted by '*a curer of ruptures, both in men and in cattle.*' This consisted in covering the hernial tumour with a poultice of bruised herbs, chiefly of the leaves of stramonium, and an infusion of senna used as an injection. The injection was administered every fifteen minutes, by means of a very large and powerful syringe. After continuing the injections for nearly two hours, there occurred a copious evacuation from the bowels, of a number of hard balls; and then, suddenly, the tumour had disappeared, with a gurgling noise.

*On the proofs of mortification on opening the sac,* Dr. Parrish assures us that *an ash-coloured and shrivelled or collapsed state of the intestine* is a much more certain indication of its death than any of the signs yet enumerated. To this he would add, also, *a cadaverous odour.*

The chapters *On the Management of Mortified Bowel,* and *On Artificial Anus,* will fully repay a perusal, though they do not furnish us with much extractive matter. When the whole calibre of the intestine is mortified, the prudent surgeon will, in Dr. Parrish's opinion, let it alone. The protruded parts have had time to be fixed to the ring and its immediate vicinity by adhesion, and there is no reason to fear their being drawn into the cavity of the abdomen by the peristaltic action of the intestines. The dead part is to be opened by incision, and a free discharge of fecal matter is to be allowed. Simple dressings are next to be applied and the case left to nature.

More difficulty attends the disposal of a strangulated intestine when mortified

spots are found upon it. The usage is, after opening the sac and dividing the stricture, to return the parts gently into the abdominal cavity, leaving the result of the case to the operations of nature. Dr. Parrish's own experience as to favourable results, under any mode of treatment, is very discouraging.

When treating of 'artificial anus,' the author relates cases in which the appearance of a small tumour at the groin, resembling bubo, and treated by emollient applications, suppurated, and gas and feces were discharged,—but without an interruption of the usual passage by the rectum. Dr. Physick's method of treating artificial anus is detailed in this work. We need not repeat it here, as it finds, without fail, we believe, a place in all lectures and books on this side, at least, of the Atlantic.

In the variety of hernia in which both omentum and intestine are protruded (*entero-epiplocele*), Dr. Parrish is decidedly opposed to returning the omentum in those cases in which the hernia has been of long standing. He calls, quaintly enough, the omentum which has been thus excluded for a length of time from the cavity of the abdomen, *expatriated*. The epithet is not a lapsus, but is used with design and evident complacency. The Doctor points out the dangers from returning thickened and altered omentum into the abdominal cavity, or from excising it after a ligature had been applied round the root of the diseased mass, or from excising the diseased part and taking up the vessels with fine ligatures, and allowing them, as is recommended for the single one in the second case, to remain outside of the wound, the other protruded parts being of course returned. He introduces a case, however, in which he excised a portion of irreducible omentum, and tied up a vessel with a ligature which he left depending from the external opening. The result was favourable.

Dr. Parrish's practice, where a large mass of omentum is encountered, is to allow it to remain undisturbed; and, if a small portion presents itself, to cut it off without apprehending danger from hæmorrhage. A case is related of mortified omentum and sloughing of the same, ending in recovery: and another, of omentum retained after the intestine had been restored; the former becoming gangrenous and being discharged by abscess pointing outwardly.

The next chapter is on *Concealed Hernia*, as the author terms it, or that in which, after taxis and apparent return of the protruded bowel into the abdomen, there is still stricture and its consequences, leading to death. The most common seat of mischief, in these cases, is at the internal ring. Among the cases recorded by the author, under this head, there is one in which the strangulation lasted eight days, and which terminated favourably.

The remarks on *Umbilical Hernia*, though few, are far from being devoid of interest. This form of hernia is not uncommon in early infancy; but in the opinion both of the author and of Dr. Physick, whom he cites, it seldom requires the interference of the surgeon. It is, the latter thinks, only necessary, in ordinary cases, to direct the mother or nurse to place the hand over the tumour, when the child cries, and to keep the bowels open. If these means fail, the application of a graduated compress, secured by strips of sticking-plaster, will be found useful.

In the chapter on *Strangulation within the Abdomen*, we are told that "the symptoms which mark a violent attack of strangulated hernia may exist, without a protrusion at any point. The obscurity of these cases baffles all efforts at relief, and the physician is obliged to look on, and witness a fatal termination."

"If a cord of omentum, thrown across the abdomen, be pressed by the distended

bowel to its utmost point of tension, it is evident that, as the accumulation of flatus increases, the sides of the bowel will be opposed by this tightened cord, and its internal surfaces be brought into contact. The greater the distension, the more firmly will the bowel be secured, and the more complete will be the obstruction. The only way in which parts thus strangulated can be relieved, is by withdrawing the flatus from the bowels, and thus restoring their freedom of motion. In another case, I should attempt to effect this by the gum-elastic tube, and exhausting syringe, employed as recommended in the remarks which follow case xxxviii. at the close of this chapter."

The means here recommended are of course worthy of trial, but they must be regarded rather as palliatives, than decidedly curative,—at least in the case supposed above, of stricture caused by a cord of omentum drawn across the intestine. The accumulated flatus no doubt augments the distress and danger; but it is, we must remember, in this case, as in peritonitis and certain forms of enteritis, an effect of prior organic change and functional disturbance.

Passing over the last chapter, headed *Anomalous Cases*, we shall draw this notice to a close by extracting the *Corollaries* of the author, "a series of practical precepts, which may, perhaps, prove important as a guide to the young practitioner."

"In every case of colic, always suspect strangulated hernia.

"Be not deceived by a free operation from the bowels; for it generally takes place directly after the occurrence of strangulation.

"The symptoms of strangulation are sometimes more violent and dangerous in a small than a large hernia.

"Guard most carefully against the employment of force in the taxis. Long-continued and injudicious efforts to procure the reduction of a strangulated bowel by taxis, must greatly increase the danger of the patient. The experience of Des-sault on this subject is worthy of constant remembrance—'You may always hope for success in a hernia which has not been touched before operating.' A patient who has long been accustomed to put up his own rupture, will generally perform the taxis much better and more safely for himself, than any surgeon can do it for him. Let not professional pride interfere with the dictates of common sense and the voice of humanity.

"In old, or delicate and feeble subjects, have a care about using violent remedies to reduce the strangulated parts, especially a short time before the operation. They may exhaust the vital energies. The lancet may be carried too far. In some subjects the tobacco injection is far more to be dreaded, than the operation when properly performed.

"Cases of concealed hernia call for the most accurate examination of the parts. The stricture may exist at the internal ring, and may readily elude a superficial inspection.

"When the symptoms are urgent, 'delays are dangerous.'

"Remember the expressions of the experienced and judicious W. Hey, of Leeds; 'I have often had occasion to regret that I performed the operation too late, but never that I performed it too early.'

"Give a full, clear, and candid statement of the case, to the patient and his friends, before the operation. Carefully avoid technicalities. Clothe ideas in language that a very plain capacity can comprehend.

"Shave the parts before the operation.

"In making the first incision through the skin over the tumour, let it be well pinched up as directed in the operation. Use a sharp-pointed bistoury with its back towards the hernial tumour.

"Secure all blood-vessels that may be of sufficient size to obscure a delicate dissection by an effusion of blood.

"Be not alarmed about complicated layers of fasciæ; they may be cautiously, but very safely divided, conformably to directions in the chapter on the operation.

"Always open the hernial sac.



"Difficulties may arise from the absence of fluid, and from adhesions, but these may be safely overcome.

"In entero-epiplocele, there may be a sac within a sac. The intestine may be entirely obscured from view by the omentum, which covers it like the crown of an arch. This must be opened before the real seat of stricture can be ascertained.

"Be not alarmed at the bloody fluid which may escape from the hernial sac.

"Examine if the smell be cadaverous.

"After the sac is so far opened as to admit the index finger, always bear in mind that this is the *best director*.

"In inguinal hernia divide the stricture upward.

"In femoral hernia do the same.

"Should the obturator artery present in front of the stricture, the utmost caution must be observed.

"I would recommend for the division of the stricture, the curved and blunt-pointed bistoury guarded as directed, and would prefer a dull rather than a sharp instrument. Let the stricture be gently divided by "*nibbling*," rather than sharp cutting.

"A very slight division is generally sufficient to admit the finger by the side of the bowel into the cavity of the abdomen.

"Should a thick coat of lymph be effused over the strangulated parts, remove it gently with the *flat handle* of the scalpel and the fingers.

"Be exceedingly tender in the separation of adhesions.

"Remember that the signs of mortification as set down in books are very uncertain. The usual symptoms may appear when the bowel is *not* mortified. They may be absent at the very moment when the bowel *is* mortified.

"Let not a dark purple colour of the bowel or even an absence of circulation, decide the question of its actual death.

"Most scrupulously refrain from making an incision into the bowel on incomplete evidence.

"When the bowel or the omentum is found in a state of mortification, do not lightly esteem the efforts of nature, but rather be cautious about the interference of art. The former is intuitive, capable of eluding many difficulties, and under very discouraging circumstances, it may produce the most happy results. The latter, aided by the lights of experience, and accompanied with sound discretion, may also accomplish much, *at the proper time*. While in some instances, well intended, yet officious interference with the *vis medicatrix nature*, may prove to be zeal without knowledge, which is said to be like courage in a blind horse.

"Be especially careful to avoid the return of expatriated omentum into the abdominal cavity, for reasons already assigned.

"To cut off a large portion of omentum near its root, and then to return it to its natural situation, subjects the patient to the hazard of dangerous hemorrhage, unless the bleeding vessels be secured by ligatures.

"To apply ligatures to the omentum, and then permit it to recede into the abdomen, carrying the ligatures with it, is to adopt a very dangerous practice. It is calculated to maintain the imperfection of a most important cavity, and to induce peritoneal inflammation.

"If a necessity should arise during an operation for hernia, to delay procedure for a short time, cover the wound with a bladder partly filled with warm water. It can be retained in its position by the hand of an assistant.

"Permit not a dread of the *inflammatory effects of opium* improperly to discourage its use in strangulated hernia. It may be justly regarded as a most valuable article in the treatment for reduction, and also before and after the operation. When an anodyne enema is used, remember it is more powerful than is generally supposed. I consider sixty drops of laudanum by the rectum, quite equal to thirty by the mouth.

"The operation for umbilical rupture in infants, as recommended by Dessault, is believed to be unnecessary. Nature is generally able to effect the cure without any other assistance from art than adhesive strips, and a bandage; or even without such aid.

"When called out into the country, always carry along a few spermaceti or wax candles. On this point I speak from experience. Any surgeon who has performed a delicate operation in the dead of the night, in some of our farm houses by the light of "*home-made*" candles, will understand my meaning.

"After the operation, gentle laxatives should be used instead of drastic purges. Castor oil is peculiarly well adapted, or a solution of manna and cream of tartar.

"Should the symptoms of strangulation continue unrelieved, the steady use of extremely minute portions of calomel, as shown in several cases that are narrated, may produce a most salutary effect.

"The diet should be carefully regulated until the immediate danger has ceased. Hard and indigestible aliment is obviously improper. Liquid and soft diet, adapted to the stomach of the patient, is important, such as oatmeal gruel, sago, Indian or rye mush, &c.; the latter is gently aperient, especially if eaten with molasses."

The cases of hernia, recorded by Dr. Parrish, are forty-three in number, of which twenty-two were operated on by himself, and in the treatment of the others he either had the direction or participated in as a consulting surgeon, except two or three, the histories of which are given by other physicians.\*

Dr. Parrish has, we think, accomplished his object, in enabling his readers to acquire, by the perusal of his book, a better knowledge of the character and treatment of hernia than they would otherwise possess. The second part of his work being on a separate subject from the first, we may with propriety, perhaps advantage, postpone our notice of it to the next month.



*On the Diagnosis of Diseases of the Chest; based upon the Comparison of their Physical and General Signs.* By W. W. GERHARD, M.D., Physician to the Blockley Hospital; Lecturer in the Philadelphia Medical Association; Fellow of the Philadelphia College of Physicians; Member of the Société Médicale d'Observation, and of the Société Anatomique de Paris, etc. Philadelphia: Edward C. Biddle. 1836.

*A Dissertation on the Importance of Physical Signs, in the various Diseases of the Abdomen and Thorax.* By ROBERT W. HAXALL, M.D. of Richmond, Va. Boston: Perkins & Marvin. 1836.

THE readiness with which American medical literature and practice are enriched by the discoveries and experience of the physicians of continental Europe cannot have escaped the most superficial observer. We are more especially under obligations, in this respect, to French medicine. The innovations begun by Broussais, and which of themselves constitute an era in the history of our profession, have been continued in other ways by Laennec, Andral, Louis, and others, to such an extent, that pathology, which half a century ago was not much more than a nosological catalogue, is now a large, important, and, in many respects, well understood branch of medical science. That the reform, still in progress, has reached American physicians, and is in fact furthered by them, will be seen, in addition to other evidence, by a glance at the titles of the works at the head of this article. The authors are both of them young men; but they do not claim the privileges of youth in yielding to their imaginations, and indulging in mystical speculations touching the

\* Two cases are both numbered VII.

vital principle and theories of life and fever; as not many years ago would have been almost a matter of course with young authors. Their ardour is not evinced in fervid declamation and fanciful theories; but in determinately and zealously repeating the experiments and experimental observations of their seniors, and of combining, illustrating, and adding to them, agreeably to the rules of inductive philosophy.

Dr. Gerhard has enjoyed and availed of the opportunities and facilities for acquiring an intimate knowledge of the subject of which he treats. In Paris, for some years, under the guidance of his preceptor and friend Louis, and in Philadelphia when house-physician of the Hospital, and more recently one of the attending physicians at the Blockley Hospital (Alms-house Infirmary), he has had a large field for observation, which he has cultivated with an industry and patience more easily to be praised than imitated. Now that he feels himself secure in the strength of the position, which he occupies, and has been enabled to take a wide and yet accurate view of the details of physical examination, and of the soundness of the diagnosis thence obtained, let us hope that he will not limit his intellectual horizon to a study of simple physical characters and mere organic alterations in disease, to the oversight of all those diversified modifications of causes operating on the human frame, and of the sympathies constituting functional disturbance, as well as of the therapeutical agents by which the latter are tranquilized and the morbid causes removed. We do not fear for him personally in these matters, in his present situation,—although we must confess that the pathological school in France, to which he is so partial, has been too often content with careful observation and accurate noting of appearances, and patient numeration of results, to the neglect of the timely prevention and active treatment of disease.

This remark brings us to the question of the applicableness and utility of the physical signs furnished by percussion and auscultation, especially in diseases of the chest. It has been asked somewhat tauntingly by the objectors to these methods of examination:—Has our knowledge of the cure of diseases of the lungs and heart been augmented by the explorative system? Are we any nearer, now than before it was introduced, to the cure of phthisis? Has it furnished or suggested a single new remedy, or made an old one more available? Without pretending to answer these questions in the precise order in which they are propounded, we may say with confidence, that physical signs, added to physiological and general ones, give us the requisite conviction respecting the precise part of the lungs or heart which is affected, as well as the nature and stage of the organic alterations. Precision in diagnosis leads to precision in practice, and guides the physician in the selection of therapeutical agents, whether general or local, which experience has shown to be most available in arresting the morbid changes and conversions of structure in the diseased organ. Surely our practice will be modified and rendered more precise and, in this sense, energetic, by our knowledge of whether the right or the left lung, or the upper or lower portion, be the seat of inflammation and other organic alteration. Cups, leeches, blisters, and other counter-irritants, will be more freely enlisted, and applied to parts of the external surface, which might have been overlooked. Then, again, the treatment of a person with cough and copious, perhaps purulent expectoration, will be different according as we are assured that he has bronchitis, or tubercles of the lungs. Diseases of the heart is a vague expression, and has by its vagueness led to the most contradictory modes of practice—large bleedings or free stimulation having been resorted to with equal readiness by two

different practitioners, and by both, in equal ignorance of the real state of the organ. The distinction between hypertrophy of one or both sides of the heart and ossification of the valves, is one of great practical moment, and which cannot be reached without auscultation. Nor is it a matter of indifference to remain in ignorance of structural alterations, such as tuberculous excavations of the lungs, which are so generally fatal and uncontrollable by any known means;—since a knowledge of their presence will prevent recourse to the use of drugs and various harsh and cruel observances, which harass the patient, cause needless suffering, and, on occasions, accelerate his end.

We do not think it necessary to give either a critical review of Dr. Gerhard's work, of which we approve, nor a detailed analysis of its contents and copious extracts. The volume is small, and accessible to all who desire its perusal. Its contents are on an important subject and in a sufficiently clear style.

In his Preface, Dr. Gerhard tells us—

“The facts detailed in the work, are chiefly derived from Drs. Laennec, Louis, and Andral. I am also indebted to the excellent treatise of Dr. Williams, and to that of Dr. Hope, on the diseases of the heart. Laennec had investigated the signs of diseases of the lungs so minutely, that few new facts have since been discovered, but some additions have been made to various points connected with auscultation; a different value has been affixed upon various signs, and they have been more intimately connected together, and with the general history of disease.

“Much valuable matter was derived from the private instruction and public lectures of M. Louis, at the Hôpital de la Pitié; almost the whole chapter upon the conformation of the chest, and numerous isolated, but important facts, were obtained from that source. The original matter chiefly consists of an analysis of the normal respiration on the two sides of the chest; a new classification of the varieties of the bronchial respiration; some facts relative to the auscultation of children; and a concluding chapter, which is designed to facilitate the inquiries of those physicians who are not yet familiar with physical examination.”

The second chapter opens in the following manner:—The physical exploration of the thorax consists in—1. Examination of the conformation of the chest, including mensuration. 2. Percussion directly upon the thoracic parietes, or on a solid body, in contact with them, in order to ascertain the degree of resonance yielded by each part. 3. Auscultation, or the application of the ear to the chest, or to an acoustic tube, interposed between the thorax and the ear of the auscultator.

“Physical exploration is not confined to these three modes of investigation, although, as they admit of an application much more extensive than the other methods, it is necessary to enter into greater details relative to them. Other physical signs are derived from succussion, or agitation of the patient, in such a way as to communicate a slight shock to any liquid that may be contained within the pleura. Some signs belong partly to the class of physical and partly to that of functional signs. These are, the thrill communicated to the hand, placed upon the thorax, while the patient is speaking, and the more or less perfect expansion of the chest during the act of respiration. The last mentioned signs are all of secondary importance.”

Under the head of *the manual performance of percussion*, the author says, “an excellent pleximeter is a piece of caoutchouc, or common gum elastic, about a quarter of an inch thick, and tolerably firm. This pleximeter is very elastic, gives a good full sound, and prevents any pain being felt by the patient.” The latter recommendation is, we fear, an argument against the entire utility of the gum elastic, by showing that, as the force of the percussion is deadened, so is the sound or resonance. The effect of the soft substance beneath the skin, viz., cellular tissue and muscle, is to deaden, or at least to obscure the sound,—an effect to be counter-

balanced by a hard body—a plate of ivory, or even the forefinger of the left hand, interposed between the ends of the fingers of the right hand of the physician and the spot of the patient's chest struck.

We should do only injustice to the author by attempting, in a few extracts, to convey an adequate idea of the means and method of auscultation, which he so distinctly, and yet succinctly describes.

After auscultation, he speaks in successive chapters, of cough and expectoration; the movement of the thorax; bronchitis, or pulmonary catarrh; emphysema of the lungs; pneumonia; gangrene of the lungs (and metastatic abscess of the lungs); phthisis, or pulmonary tubercles; pulmonary apoplexy, and œdema of the lungs; pleurisy; pneumo-thorax; tubercles of the bronchial glands; of the heart; inflammation of the heart and its membranes; diseases of the valves of the heart; hypertrophy and dilatation of the heart. The concluding chapter is on the method of acquiring a knowledge of the physical signs.

Doctor Haxall's Dissertation bears evidence of thought and study, which by his visit to France have received a fresh impulse and a special direction. He takes up, *seriatim*, the different organs of the abdomen and chest, ostensibly in reference to the physical signs furnished by them when in a morbid condition; but he, in fact, enlarges the inquiry, so as to make it embrace a number of the general or functional signs. He begins with the Liver, to which he devotes several pages, in which he points out how, by palpation and percussion, the limits of this organ may be determined, and its morbid enlargement, as well as its aberrations of structure, ascertained. The Spleen next engages, but briefly, his attention. Of the morbid conditions of the Uterus he remarks, "that without the aid furnished both by the touch and the *speculum*, our diagnosis would seldom or never be correct." What then shall we think of the wisdom of those physicians, and they have been in goodly number, nor is the class extinct, who prescribed, during months, various drugs for the relief or cure of the diseases of this organ, without ever once ascertaining its structural state, and whether there were any notable alterations in this respect? Even a prolapse of the uterus has often subjected its unfortunate possessor to a whole round of tonics and alteratives, given with a view to strengthen the parts,—on grounds about as rational as if they had been administered for the removal of the folds of the abdominal cellular tissue and skin in women who have borne many children.

The ovary, kidney, bladder, stomach, intestines, are each passed in review, though, as already intimated, without a very rigid adherence to an enumeration of the physical signs which they present. The presence of *stercoral accumulations*, and, in rarer instances, of *calculous concretions*, in the intestines, may be ascertained, and guide to useful practice, by percussion and palpation. The author cites a case of calculous concretion from a work, *Les Maladies chirurgicales du Canal Intestinal*, by M. Jobert, which was mistaken for a cancer of the rectum. Richerand, who was consulted by the patient, was led to suspect the true nature of the disease, of which he assured himself by introducing a finger into the rectum. He then enlarged the anus with a blunt-pointed bistoury, directing the incision towards the coccyx; "after which he was enabled to introduce a species of scoop, smeared with oil, between the sides of the rectum and the calculus, which he then extracted; but he was unable to withdraw it except by piecemeal, for it had a considerable volume. He prescribed oily potions and enemas." A cure soon followed.

*Typhus Fever* is pictured after the language of Louis, in Dr. Haxall's Dissertation. The full notice of this disease, contained in the first and in the present number of this

Journal, will excuse us from additional extracts here. When describing some of the symptoms of *peritonitis*, the author states a case of a neuralgic affection of the peritoneum, marked by great tenderness of the abdomen on the slightest pressure, and associated with undue sensibility of some of the dorsal vertebrae. The application of tartar emetic ointment to this part was tried, and the patient was soon relieved from his sufferings.

The larger part of the Dissertation is devoted to a review of the organic alterations of the contents of the thorax; the lungs, heart, and the lining and investing membranes. This summary is creditable to Dr. Hazall, and will amply repay a perusal by the information which it contains respecting a number of morbid changes and diseases, in the treatment of which there still prevails among the followers of routine and the sneerers at innovation, a great deal of empiricism. The example of the author of the Dissertation will, we hope, prompt his professional brethren of the Old Dominion to carry out in successful detail, the experimental investigations into Diagnosis by the aid of exploration. With many of them the subject is no longer a novel one, thanks to the zeal and success, in this branch, of Dr. Jackson of the University of Pennsylvania.

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## LITHOTRIPSY.

THE term by which surgeons designate the breaking down of stone in the bladder, is *lithotripsy*. It expresses the general result, without precise specification of means. Whereas, *lithotripsy* properly applies to a particular mode of reducing the stone; viz., by perforating and breaking it down. This is the process still employed by Civiale, and which, in his hands, has been attended with such happy effects. It is not necessary to enumerate, in this place, the various modifications of instruments and modes of operating proposed by different surgeons. The chief methods are reducible to four: viz., 1. *That by successive perforations of the calculus and breaking down of the fragments.* 2. *The eccentric grinding or scooping, and reduction of the calculus into a friable shell, and a crushing of this latter.* 3. *Grating, or destruction of the calculus from the circumference towards the centre.* 4. *Direct breaking and crushing of the calculus.*

The first method is that after which Civiale operates, and the instruments for which he invented and improved, in the period between 1817 and 1824. The second is that for which Leroy has taken so much pains to invent and modify instruments; in which course he has been followed by Amussat and Heurteloup. The apparatus for the third method was invented by Meirieu, improved by Tanchou and modified by Recamier. The fourth method, or that by which the stone is directly crushed into small fragments, was first suggested by Amussat, who also devised instruments for carrying it into effect. His *stone-breaker* (*brise-pierre*) was modified by Sir Henry, a cutler and manufacturer of surgical instruments, at Paris. But the two principal inventors under this head are Jacobson of Copenhagen, and Heurteloup—the latter of whom abandoned the plan of scooping out the stone for that of directly breaking it down.

It is now generally known that a straight canula, containing the lithotriptic appara-

tus, can be readily introduced into the bladder. But, what was not ascertained until lately, instruments having the curvature of a common catheter may be used for all the varieties of lithotripsy. Those of Heurteloup and Jacobson have a curvature at their extremity.

Into a detailed description of the instruments employed and the movements communicated to them with a view to break down the stone in the bladder, as also of means resorted to in order to fix the subject of the operation and preserve the desired immobility of the instruments which grasp and contain the stone, it is not our purpose to enter here. Without numerous engravings these things could not be understood at all, and even then, imperfectly, unless the reader had seen a lithotriptic apparatus. Our object, and that which most concerns the medical and general public, is to state with brevity the leading conditions on which depend so much of the success of the operation of lithotripsy; and the accidents and unpleasant subsequent effects which render it either hurtful at the time, or decidedly injurious afterwards.

We are told that the urethra should be of full diameter, and the bladder healthy, the stone not an oxalate or very hard, and not to exceed the size of a walnut. The presence of several calculi in the bladder does not constitute an objection, if the conditions in regard to size and resistance be attended to. There should be no serious irritation of any other organ, or great irritability of the system at large. The operation may however be performed, even though the calculus be large and hard, and the urethra have some strictures, and the bladder not entirely healthy, and the prostate enlarged—*provided*, that suitable means be used to dilate the urethra to the requisite extent, and to allay both the irritation of the bladder and any other organ, by appropriate remedies, such as, for the first indication, the warm bath, fomentations, laxative and anodyne enemata, and, on occasions, topical bleeding, with always the free use of diluent and demulcent drinks.

Lithotripsy is deemed inapplicable to children and to very aged persons: to the former, on account of the narrowness of the urethra not admitting of instruments of the requisite size, and the small capacity of the bladder preventing their display and motion; to the latter, on account of the diseased condition of the prostate glands, especially of its middle lobe, and of the bladder and urethra,—the one being thickened and irritable in the extreme, the other excessively narrowed by old strictures. Notwithstanding these assumptions, we are told, on the authority of both Civiale and Leroy, that partial paralysis of the bladder and enlargement of the middle lobe, so as to obstruct the neck of the bladder and give rise to partial or complete stoppage of urine, which are commonly regarded as counter-indications to lithotripsy, have entirely disappeared after this operation. On the other hand, it should not be forgotten, that retention of urine has been caused by the introduction into the bladder of lithotriptic instruments, as well as by the operation of breaking down the stone. This has been owing to their irritating either the urethra, the prostate, or the neck of the bladder, and giving rise to inflammation or abscess. In some persons, also, the bladder is so extremely irritable, and contracts so violently, that it cannot receive any injected fluid, be dilated in any manner, nor support, ever so little, the presence and action of the instruments. Even demulcent and narcotic injections into a bladder thus constituted, fail to tranquilize it. In such a case, opium should be given by the mouth, in one or two grain pills every hour, until six to eight or ten are taken; or this medicine administered in the form of laudanum with a small quantity of fluid, per anum, an hour before the operation.

The strongest counter-indication to lithotripsy is this excessive sensibility and the spasmodic contraction of the parietes of the bladder, which, if they persist, must prevent the performance of the operation and compel a recourse to lithotomy.

In fine, a very slight knowledge of the sympathies of the organs, and of the readiness with which irritation of the urinary apparatus is transmitted to, and powerfully acts on, the nervous, circulatory and digestive systems, will point out to the surgeon who is not a mere mechanic or artisan, the necessity both of suitably preparing his patient before the operation of lithotripsy, and of watching either local or constitutional disturbances, or both, and arresting them by well-directed therapeutical means, after recourse to it.

That an observance of these precautions, and the employment of tact and surgical dexterity, will secure a large proportion of successful results to the operations of lithotripsy, is evident from experience in this city, and notably in the practice of Dr. Randolph. This gentleman, at a time when his seniors in the profession would not attempt lithotripsy, because they did not choose to begin to learn any thing new, and when the younger members were waiting for example and further encouragement, set about preparing himself in the proper manner to perform it. He procured good instruments; he practised, long and much, the means of introducing them and putting them in action on stones introduced into the bladder of the dead subject; and then, sure of himself and the resources of his art, he waited for a suitable opportunity of performing lithotripsy on a living sufferer. Dr. Randolph has succeeded in fourteen cases, thirteen of which are recorded in the *American Journal of Medical Sciences*, Nos. XXIX. and XXXVII., or for November, 1834, and November, 1836. We shall abridge their history, as follows:—

The first case was that of a man aged fifty years, who had been afflicted with symptoms of the stone for three years preceding the operation. He was seldom able to retain his urine for a longer period than from ten to fifteen minutes. The first operation, which lasted fifteen minutes, was performed on the 22d September, 1832, by the introduction and action of the three-branched forceps and drill (the lithotriteur) of Civiale. On the 29th of the month, and on the 13th and 31st October, it was repeated with the same instrument,—the stone having been, each time, perforated and partially broken down. In order to seize and crush the remaining fragment, Dr. Randolph made trial of Jacobson's instrument, the *bise-pierre articulé*, on November 7th, with which he readily "succeeded in catching the stone and breaking it into pieces." From the date of some days after this the patient rested well at night, and was able to retain his urine for five or six hours,—this fluid having become perfectly clear. On the 26th November, the patient was reported to be cured. Five months subsequently, however, he called on Dr. Randolph, complaining of symptoms of the stone. A sound introduced showed the presence of a fragment of a calculus, which was afterwards soon caught and crushed by the use of Jacobson's instrument, in two sittings. From this time, to the date of the communication, an interval of two years, and we believe we may add, up to the present day, this man "has enjoyed good health and attends to his ordinary concerns."

The second case was of a married lady, twenty-seven years of age, in feeble health, owing mainly to the irritation from the stone, for a period of fourteen years. So great was the irritability of the bladder in this instance, that no injected fluid could be borne in it, and on November 16, 1832, the lithotriteur of Civiale was introduced at once. A portion only of the calculus was seized, and a partial perforation made. The operation was completed by the withdrawal of Civiale's and the introduction of Jacobson's instrument, by which latter a considerable portion was broken off. Large quantities of calculous matter were voided for five or six days afterwards, as similar evacuations had taken place in the case of the first patient after each operation. On the 26th November, the instrument of Civiale was again introduced and the stone soon caught and drilled through; the blades of



the forceps were then expanded slightly, the stone loosened, and its position being changed, another perforation was made. Embarrassment was experienced here, as it had been in the first case, in withdrawing the instrument, on account of the soft stone adhering like mortar to the sides of the drill and forceps, and preventing the blades from closing entirely. This part of the operation caused considerable pain, and when the instrument came out, it brought with it a large quantity of sandy matter. On the 15th December, the operation by the lithotriteur first, and then Jacobson's instrument, was repeated, with the effect, as was thought, of breaking up the calculus completely.

On the 25th December, Dr. Randolph introduced Jacobson's instrument, caught and broke the stone, and caught and broke it again. The discharge of fragments after this was accompanied with a good deal of straining; and on the fifth day a hæmorrhage occurred, which "was stopped by keeping her perfectly still in a recumbent posture, making cool applications to the vulva, and draining off the water by means of a catheter,—besides which she drank cool alum whey."

On examination, subsequently, a fragment was still found in the bladder, for the purpose of destroying which, use was made of Jacobson's instrument twice in the month of January, 1833. The patient's health during the month of February improved very rapidly, and the symptoms of stone were so completely relieved that she was unwilling to believe she was not perfectly cured. But a small fragment was still in the bladder, which was drawn out almost entire between the blades of the instrument of Jacobson, introduced for the purpose. February 27th: examinations made by the operator and also by Dr. Physick, showed the bladder to be entirely free from the least particle of stone. Early in March, the patient, who was from another State, returned home. She died last year, of pulmonary disease.

Case iii. was of a married lady, aged twenty-eight years. On the 16th March, 1833, Civiale's instrument was introduced; but Dr. Randolph could not succeed in catching the stone, by the most careful efforts with the expanded blade of the forceps. The patient declared that she did not suffer the slightest inconvenience from these attempts. On the 20th March, the *brise-pierre articulé* of Jacobson was introduced, and after a few minutes the stone was caught in it and several fragments broken off. The operation was repeated with the same instrument, on the 29th, 30th, and 31st March, after which last date, the whole remaining portion of the calculus came away, and the patient declared she was perfectly cured. Careful sounding, both by the operator and by Dr. Physick, confirmed her impressions. "It may be remarked that the treatment of this case occupied but two weeks, during which time the patient was not confined to her bed for a single hour, but continued to attend to the affairs of her house as usual."

Case iv. was of a clergyman, aged sixty years, who had suffered from stone for six years preceding the operation for his relief. This was performed first on the 19th May, 1833, and repeated subsequently on the 26th of the month, and on the 2nd and 16th of June, with the instrument of Civiale; and on the 23d, the last time, with Jacobson's. On the 4th July, Dr. Physick made a final examination of the bladder, at the request of the operator, and no stone could be found. The patient went home to a southern state, cured, having been subjected to little pain and only a few hours confinement to his bed. After a twelvemonth's interval, or more, the symptoms of stone returned on this person; but they were found to depend on a disease of the prostate gland.

Case v. was of a merchant, sixty-four years of age, who, for a period of thirty years, had experienced considerable uneasiness in the urinary organs. The lithotriteur of Civiale was introduced, and used twice, and the instrument of Jacobson five or six times; by which means a cure was effected.

Case vi. was of a clergyman, aged sixty-five years, a native of England. Dr. Randolph having been baffled, after repeated and well-directed efforts, in introducing the instrument of Civiale, on account of the enlargement of the middle lobe of the prostate, had recourse to Jacobson's. On the 4th of October, 1833, the first operation was performed, and was repeated, between that date and the beginning of June, 1834, ten or twelve times—intervals of some length being required by the patient's delicate health and prostrated state of system. The operations did not last more than two or three minutes; they were not followed by unpleasant symptoms, and

gave rise to the voiding of an immense quantity of calculous matter. About six weeks from the date of the last use of the instrument, viz., on the 20th of July, whilst the patient was looking out for a place in the country to which he might retire during the summer heats, he was attacked with diarrhœa, and died on the 29th.

An autopsic examination made by Dr. Pancoast, and detailed in the Journal, showed that there was not the slightest evidence of injury to the bladder by the operations above mentioned.

Case vii. was of an old gentleman, aged seventy years, whose urethra was in a healthy condition and sufficiently large to admit a sound of full size to pass readily into the bladder, which was also natural. He could retain his urine for two or three hours. The calculus was evidently of a small size. Four operations, with Jacobson's instrument, from the 7th October to the 16th December, 1834, sufficed to accomplish an entire cure. The period was lengthened by the patient's returning home after the third operation, on the 24th October, and not visiting again the city until the 15th December.

Case viii. This patient, aged sixty years, had been afflicted with the stone for several years, and had, about a year prior to this period, (November 13th, 1834), submitted to the operation of lithotomy with, as far as regarded surgical skill, entire success. The stone was however so soft, that in its extraction it broke into innumerable fragments. The expected relief was not, after all, obtained, and he agreed to the operation for lithotripsy, which was performed by Dr. Randolph, on the day above mentioned. The bladder was very sensitive and irritable; but the stone was caught with readiness and broken into several pieces, with Jacobson's instrument. The operation lasted about five minutes. It was repeated four times, subsequently—the last on the 19th January, 1835, and with the effect of performing an entire cure.

Case ix. was of an aged physician, seventy years old, who had been labouring under symptoms of stone in the bladder for three years. He was relieved by the introduction and action twice of Jacobson's instrument. On the first, the stone was seized and broken four several times.

Case x. was of an old gentleman from Virginia, also seventy years of age. Six operations with Jacobson's instrument, (the *brise-pierre articulé*), sufficed to cause an entire removal of the stone, and the restoration of the patient to good health.

Case xi. was of a gentleman aged fifty-five years, who had suffered from stone in the bladder for nearly three years. A single operation with the instrument of Jacobson, was followed by the discharge of the fragments, and a complete cure.

Case xii. was of a gentleman aged fifty-seven years, who dated his complaints as far back as 1816, and during the last nine years has had marked symptoms of urinary calculus. Despite his irritable bladder and inability to retain any fluid in it, Dr. Randolph introduced the *brise-pierre* September 28th, 1835, twice readily caught and crushed the stone. October 1st, the operation was repeated in a period short of five minutes, by introducing the instrument, catching and crushing the stone four times. October 15th was the date of the last introduction of the instrument, and crushing of the remaining fragments. Sounding the bladder on the 25th, proved it to be entirely free from calculous matter. When questioned about the pain from the operation, the patient replied that this was nothing, compared to what he often suffered from the spasms of the bladder.

Case xiii. This patient, sixty-two years of age, had a stone in the bladder which, on analysis after its expulsion, was proved to be an oxalate of lime, the kind which has been declared to be unfit for removal by lithotripsy, on account of its great hardness. Dr. Randolph succeeded, notwithstanding, in entirely bringing about the expulsion of the calculus in this case, by seven operations with Jacobson's instrument.

Case xiv. We had the pleasure of witnessing the first operation on the *fourteenth* successful case in Dr. Randolph's practice. The following are the notes, furnished by the operator himself.

“Mr. William Askine, aged thirty-two, of Pittsburgh, Pa., arrived in this city

the latter end of October, 1836, afflicted with a stone in his bladder. On the 2d of November, 1836, Dr. Randolph introduced the *Brise-pierre Articulé*, of Mr. Jacobson, into his bladder, (in the Pennsylvania Hospital), in the presence of several physicians and a large number of medical students. He succeeded in catching the stone immediately, and crushed it three times. The calculus was quite soft, and not of very large size. The operation was not followed by any unpleasant symptoms. He passed out, soon after its performance, a good many fragments of calculus, together with a nucleus which consisted of a portion of hard dark-coloured wax. He was almost entirely relieved of all his painful symptoms, by this one operation: there remained merely a slight sensation of uneasiness at the neck of the bladder. On the 10th of November, Dr. Randolph again introduced the instrument, and caught a fragment and crushed it. A few hours after this operation he discharged all the calculous matter from his bladder, and was completely relieved from every symptom of stone. He could now retain his urine all night; it became quite clear: the mucous discharge ceased entirely. He was sounded very carefully, several times, and his bladder was found to be entirely free from any calculus. He left the Hospital, completely cured, on the 16th of November, 1836."

Our account of these operations would be incomplete without a mention of the evidences of subsequent constitutional irritation, and of the means used to combat them. Three days after the third operation on the first patient recorded, "he had a slight chill, which was followed by some fever and pain in the back; these symptoms yielded to two bleedings and a cathartic." A warm bath was prescribed and used in some of the cases, after the operation.

The subject of case fifth was attacked, some hours after the first operation, (with the lithotripter), with a chill, followed by some fever: "this, however, yielded to a bleeding and saline diaphoretics." On the day following the second operation, the patient "had a fever, which continued for some time; for the relief of which it was necessary to bleed him twice, and apply leeches over the pubes." The bladder of this patient was so irritable from the first, that Dr. Randolph could not succeed in introducing more than four ounces of the fluid, and this caused him so much pain that it was not resorted to again.

The subject of case seventh experienced, a few hours after the second operation with Jacobson's instrument, a chill, which was followed by some fever. A mild cathartic, and afterwards a Dover's powder, which latter produced a profuse perspiration, were sufficient to remove all irritation.

The patient recorded as case eighth, had, two hours after the first operation, a chill succeeded by some fever,—which passed off during the night by perspiration.

It will be seen, from the above histories, that an enlarged and diseased prostate gland and irritable bladder, or a very large stone, or a very hard one, are not unavoidable obstacles to the successful employment of lithotripsy. The cautious surgeon will, however, when he has ascertained the existence of such drawbacks to the restoration of the patient to comfortable bodily feelings and health after the operation, consider a duty, both to himself and to this latter, to state his fears.

In the case of females, lithotripsy is the only operation which can be had recourse to with a prospect of entire success, and an avoidance of incontinence and stillbirth of urine, worse, in some respects, than the original disease.

We may hereafter, in referring to Dr. Gibson's experience in lithotripsy, take occasion to notice the animated discussion lately held in the French Academy of Medicine, on the merits and disadvantages of the two operations of lithotripsy or lithotricy, and lithotomy, respectively.

## PATHOLOGY AND THERAPEUTICS.

## CHOMEL ON TYPHOID FEVER.

We continue, and terminate in our present number, the valuable summary of this work, derived from the *British and Foreign Medical Review*.

*Varieties of Typhoid Fever.* The sketch of fever which has been given embraces all the symptoms, but in no one case do they all meet; some symptoms excluding others, or being constantly united. The concurrence of particular symptoms constitutes varieties of fever, to which distinct names have been given by authors, as if they were distinct affections.

1. *Inflammatory Typhoid Fever.* This is frequent, particularly in winter: those of a sanguine temperament, and from twenty to thirty years old, and subject to hemorrhages, are liable to it. When well marked, the peculiar symptoms occur early; such as fulness and frequency of the pulse, hot skin, dryness of the throat, thirst, loss of appetite, oppression, and other general symptoms common to inflammatory affections; but, besides these, there are constant headach, muscular debility, disposition to hemorrhages, dry tongue, diarrhoea, typhoid and millary eruptions. The form changes generally to the adynamic and ataxic about the seventh or eighth day, sometimes earlier. In two cases only out of forty-two fatal ones did the inflammatory form continue throughout the disease, and in one of these cases death was produced by perforation of the bowels. During five years, during which these cases were collected, M. Chomel saw no other instances of inflammatory fever which were fatal, and he has never met with inflammatory fever which was not a variety of the typhoid affection.

2. *Bilious Typhoid Fever.* Most frequent in summer and autumn. In two cases out of forty-two fatal ones, there were bilious symptoms at first, giving way to more serious ones. Five others were cured where these symptoms continued throughout. The symptoms are—yellow skin, especially around the lips and anæ nasi; frequent nausea, and vomiting of bile; bilious stools; bitterness and dryness of the mouth; yellow or greenish coating to the tongue; tinnitus aurium; depravation of taste, smell, and touch. The duration of these symptoms is seldom beyond the seventh to the fifteenth day.

3. *Mucous Typhoid Fever.* This, like the bilious, seems to depend much on localities: it is seldom well marked in Paris. The symptoms are—great debility; pale or swollen face; muscles soft; mouth pasty; breath, saliva, perspiration, and urine, of an acid odour; stools mucous or glairy: after a short period it is replaced by the adynamic or the ataxic form. Two out of forty-two fatal cases had these symptoms.

4. *Ataxic Typhoid Fever.* One of the best marked, most frequent, and most generally fatal forms. Ten out of forty-two were ataxic: four of these were unmixed throughout, and death ensued on the eighth, ninth, and twelfth days; two were preceded by the inflammatory, and two by the adynamic symptoms. This variety is distinguished by a remarkable disturbance of the functions of relation; as delirium, cries, threats, efforts to strike or escape; sometimes by mild delirium, heaviness, alteration or perversion of the senses, twitching of the tendons, convulsions, rigidity, &c. In other cases there is a remarkable discordance between the symptoms: thus, whilst the pulse is rapid, the skin is not hot, or one part is cold whilst the rest is very warm; or, whilst the face expresses a disease almost inevitably mortal, the pulse is hardly affected. Frequently the delirium is not in proportion to the other symptoms, either less or greater. Sometimes a sudden improvement leads the practitioner to doubt his diagnosis: the benefit is, however, temporary only. In some cases the patient is perfectly restored to his senses before death. Ataxic symptoms do not belong exclusively to fever, but may coexist with visceral inflammation, puerperal, eruptive, and other acute diseases.

5. *Slow Nervous Typhoid Fever.* The symptoms are—a general indifference, great lassitude, heaviness, dejection; slight headach; pulse frequent and weak; constant wakefulness; no thirst, although the mouth is dry; if there is delirium,

it is not violent, and consists of a confusion between thought and action; the patient mutters: in unfavourable cases the strength diminishes, and the stupor increases, with other adynamic symptoms; in favourable ones, the patient gradually throws off the drowsiness, or suddenly, as if awaking from sleep.

6. *Adynamic Typhoid Fever.* The most frequent form, adynamic being marked in twenty-six out of forty-two fatal cases: in ten of these, adynamic symptoms were present throughout, and in sixteen at the termination only. The predominant symptom is muscular debility, which may gradually stimulate paralysis. These patients, with every appearance of strength, can neither lie down nor rise up in their beds without help, or even turn on one side. Towards the termination they lie immovable, and after many hours are found in precisely the same position in which they had been left. There is commonly great mental debility, commencing with early stupor. In bad cases, or at an advanced period, the patient does not answer questions which are put to him, and his unmoved features show that he has not understood them: after a loud question he may direct his eyes momentarily towards the speaker. Headach diminishes as adynamia increases, and is replaced by wakefulness, or constant unquiet dreams. The mouth is covered with a thick layer of dry mucus; great meteorism; often no sensibility on pressure; stools generally fetid and involuntary; sloughing of the parts pressed upon; urine and sweat fetid; petechiæ; skin at first warm and dry, afterwards cold; pulse feeble, trembling, at first rapid, latterly slow. This state sometimes lasts long.

*Diagnosis.* This is sometimes extremely difficult. It is prudent not to give a decided opinion during the first three or four days; for, when the symptoms are not very decidedly marked, they differ little from the precursory fever of many eruptive diseases, as small-pox, scarlatina, measles, of some catarrhal affections, or latent visceral inflammations. The long duration of the febrile condition is an important characteristic. Whenever febrile symptoms, which cannot be referred to any appreciable lesion, last eight or ten days, there are strong grounds to presume that the glands of Peyer are diseased, and when, on the other hand, a febrile disease, of the nature of which were doubtful, it is not this affection. Between the sixth and twelfth days, symptoms which clear up the diagnosis generally appear, such as meteorism, typhoid eruption, stupor, epistaxis, hemorrhage from the bowels. At a later period still, there is less difficulty; for, even if the symptoms during the first and second periods have been absent, those which belong to the third remove all doubts: these are intestinal hemorrhages, sloughing, involuntary stools, and other marks of adynamia.

*Prognosis.* Few diseases are so fatal. Out of 147 cases in the clinical wards of the Hôtel Dieu, between 1828 and 1832, forty-seven died, or one in three. Though a mortality of one in three is a very large proportion, any inferences unfavourable to the treatment of fever should for many reasons be made with caution and charity. The mode in which patients are distributed to the various hospitals in Paris, is brought forward as one excuse for such fatality. All the hospitals being under the direction of government, a central board of medical men is appointed to examine the patients who apply for relief, and to distribute them among the different hospitals. This board meets near the Hôtel Dieu, so that the severest cases of fever are often sent there, as it is the nearest place. M. Chomel is also the professor of clinical medicine, and the most serious cases are sent to the clinical wards. These reasons would account for a greater apparent mortality than under other circumstances, if we did not find that during several years, whilst M. Chomel was physician to La Charité, the mortality in about the same number of cases was rather greater. M. Louis founded his "*Recherches sur la Gastro-entérite*" on 138 cases of fever treated by M. Chomel, and out of these there were fifty deaths.\* The average of one in three seems to be therefore independent of these local causes.

Fever is less dangerous in patients under eighteen years of age, and more dangerous after the age of forty. No appreciable difference is observed in regard to sex. Previous feebleness of the system does not appear to act unfavourably. Two out of four patients who attributed fever to moral causes of depression died. Of sixteen patients who admitted that they had taken stimulating drinks at the commencement of the attack, three only died. M. Chomel concludes that those cases

\* *Recherches sur la Gastro-entérite, &c., par P. Louis. Vol. 1. p. ix.*

are most dangerous where the attack was sudden. The tables given, however, indicate the opposite, the mortality being rather less than one in three where the attack was sudden, and slightly above one in two where there were premonitory symptoms. (P. 433.) There is probably some numerical error. If during fever there is a decided remission, followed by an aggravation of the symptoms, the termination is generally fatal. There is less danger when the form of the disease does not change: the ataxic is in such cases the most fatal. Complicated cases are very fatal: thus, of thirteen cases of inflammatory adynamia, eight died. Many symptoms, when they become intense, are important in the prognosis. When delirium is early and violent, it is very unfavourable. Of forty-two fatal cases, twenty-two were violently delirious. When it consists in a dreaming state from which the patient can be roused, there is less danger. Of eighty patients who recovered, twelve had this mild delirium. Involuntary evacuations, when passed without consciousness, constitute a bad sign. Of thirty cases, in which this symptom was present, thirteen died. Constant and general twitching of the tendons is highly unfavourable. In five cases with general convulsions death was speedy. Coma is one of the most fatal symptoms; it should be distinguished from stupor, in which the patient's attention can be roused. Of seven patients with intestinal hemorrhage six died. M. Chomel does not think deafness unfavourable. The expression of the face is important: when emaciated and shrunk, (facies Hippocratica,) death is at hand; whilst improvement in intelligence of expression is often the first sign of amendment. If the pulse exceeds 120 or 130 it is bad, when 150 or 160 death is near. When it becomes slow after having been rapid, without symptoms of improvement, it is a fatal symptom, unless proper means to relieve the patient are not employed. Perforation of the intestines, and erysipelas of the face, are generally fatal complications. The danger of inflammation of the lungs is in proportion to its extent and to the general condition of the patient. When it occupies a considerable portion, or the whole of one lobe, and is not arrested, it is fatal, even before it passes into the second and third stage. Circumscribed pneumonia is often discovered in those who have extensive suppurations on the sacrum, and is dangerous. As pneumonia is often latent, considerable attention should be paid to the lungs. In three patients inflammation of the larynx and epiglottis took place, and was fatal. The injurious effects of sloughs on the sacrum, heels, &c., have been exaggerated. In seven cases, only three died, and in those which recovered the extent of the ulcers was truly alarming. Abscess in the external parts was observed in six, all of which recovered. They were not found in parts subjected to pressure.

**TREATMENT.** M. Chomel employs the rational mode of treatment, in which the disease is treated according to the symptoms which may be present, and not according to any uniform plan. By this mode, none of the specific modes of cure is excluded, though none is exclusively adopted. The antiphlogistic, the antiseptic, the tonic plans are not individually adhered to in every case, but are applied according to the form which the fever may assume. This is called rational treatment, as it supposes that the practitioner reasons on every case; it is also called symptomatic, from the attention which is necessarily paid to symptoms.

In the simple uncomplicated forms, M. Chomel prescribes refreshing drinks, such as lemonade, orangeade, solution of syrup of currants, pure water taken at short intervals, emollient fomentations and poultices to the abdomen, if it is painful; washing the body with vinegar and water, or simple baths, if there is much heat; mucilaginous lavements repeated many times daily; cold compresses to the forehead, if there is much headach, and warm or mustard poultices, if there is any tendency to drowsiness or forgetfulness. He also commences by taking some blood from the arm, as he agrees with M. Louis that this has a favourable influence on the duration of the disease. If the headach is intense, or if there is much abdominal pain, leeches may be applied behind the ears or to the anus. If the stools are scanty, mild laxatives, such as whey with tamarinds, neutral salts, &c. If there is diarrhoea, it should be restrained by mucilaginous drinks, gum or rice water, small lavements of starch. Free air and absolute cleanliness are indispensable: great care should be taken that the urine and feces passed involuntarily should be immediately removed. When amendment commences, the emollient drinks may be exchanged for aromatics and gentle bitters: diet improved, such as vegetable jellies,

weak broth, wine and water, &c. When the symptoms are more urgent, this expectant treatment is replaced by a more vigorous one.

*Treatment of Inflammatory Typhoid Fever.* This requires the antiphlogistic treatment according to the age and strength, but by no means with the same vigour as in simple inflammations; for it must be remembered that adynamic symptoms frequently follow inflammatory; there is therefore a necessity of husbanding the powers of the patient. Another reason for the same caution is, that inflammation frequently springs up in the most debilitated subjects. Therefore, after taking blood once or twice, generally and locally by leeches, these means must be laid aside, and complete abstinence, with the remedies just mentioned, trusted to. The only cases where general bleeding is indicated in the second and third periods, would be when inflammation attacks patients who are not greatly debilitated. Great caution is required in all such cases.

*Treatment of Bilious Typhoid Fever.* The bitter taste in the mouth, great thirst, &c., cause the patient to request cooling drinks, ripe fruits, &c., which should be allowed. M. C. has not found emetics and purgatives so useful, nor bleeding so dangerous, as the physicians of the last century state. Emetics may be used at the commencement of a sudden attack, if the stomach appears to be loaded, but cooling drinks and fruit generally relieve the bad taste in the mouth.

*Mucous Typhoid Fever.* This is treated like the simple, except that acid drinks are given instead of emollients, and slightly bitter and aromatic infusions of indigenous plants, such as are made no use of in this country except by the poor, and therefore not at all equivalent to our pharmaceutical bitters and aromatics.

*Treatment of Stazic Typhoid Fever.* The treatment of this variety is very difficult: the antiphlogistic, tonic, and antispasmodic plans have all had their exclusive supporters. The treatment however must vary. If inflammatory symptoms are present, the antiphlogistic treatment, and if the adynamic, tonics must be recommended. When there is no precise indication, the expectant treatment it to be followed.

*Treatment of Adynamic Typhoid Fever.* When there is stupor, unusual prostration of strength, weakness of the pulse, faintness in the sitting posture, and involuntary passing of stools and urine, we must use bitters and aromatics, such as bark, chamomile, and sage in draughts, lavements, baths, and external applications; with wine, camphor, and ether: if the symptoms increase, the doses must be larger, and the wines of Spain given instead of those of France. Extract of bark, by the mouth and in lavements, in doses of one to two ounces a day, is given by M. Chomel in preference to quinine, if the stomach will bear it, as he doubts whether the sulphate of quinine contains all the tonic powers of bark equally with its febrifuge and antiperiodic principles. In this state tonics and excitants, instead of aggravating the lesions of the intestines, exercise a favourable effect upon them. The intestinal ulcers are analogous to cutaneous ulcers in similar subjects, which are improved by stimulating applications. In three instances where the patients died during the tonic treatment, the ulcers in the intestines were evidently cicatrizing. The tonic treatment was followed in nine patients, all of whom when it was commenced were in an alarming state of prostration, and six of these recovered. It is important that tonics should be given before the strength is too much exhausted, and yet not during reaction. The exact time must be determined at the bed-side, as no exact rules can be laid down. If delirium or other signs of cerebral congestion exist, wine should not be given, as it almost inevitably aggravates the symptoms. M. Chomel commonly gives wine in spoonfuls, at first once or many times daily, increasing the quantity as debility increases. The lighter wines he gives with other drinks, in the proportion of a fourth, a third, or half; the stronger wines pure. In some cases the benefit is immediate: the pulse rises, the heat of the skin increases, and the expression improves. Ether is particularly useful when it is necessary to raise the powers rapidly, but its action is transient; it should be given with bark. Camphor is only employed by M. C. in lavements with bark, when debility is great. Bark in infusion, decoction, or still better only macerated in water, and sweetened with syrup of lemon, is one of the best drinks. Also infusions of serpentaria, cascarrilla, and sage. The tonic treatment is rarely necessary in the first stage, and should never be tried then except with great reserve. In the second and third stages we may employ it with more confidence and energy. Seve-

ral excellent cases are detailed in which success followed this treatment in apparently hopeless cases. M. Chomel mentions the application of revulsives and of warm and cold baths, but states nothing decidedly as to his own opinion of their efficacy.

*Treatment of Particular Symptoms and Complications.* Hemorrhages are rarely so profuse as to require special treatment. Epistaxis may render plugging the nostrils necessary, and if the discharge of blood from the bowels is great, cold or iced water in draughts, lavements, and external applications, extract of rhatany, &c., should be tried. Great care should be taken to prevent the formation of sloughs: when the fever has lasted any time the parts pressed on should be examined, and if there is that redness over the sacrum which precedes sloughing, the patient should be so supported as to lie on the side or even on the belly. When the eschar has formed, it should be covered with diachylon plaster; when it has fallen, the wound should be dressed as an ordinary ulcer. M. C. has not tried Dr. Arnott's water bed. The treatment of local inflammations attacking a debilitated subject is very difficult. Local bleeding, particularly cupping, must be cautiously employed, if the strength will permit. But generally the adynamic condition forbids it, and the tonic treatment must be pursued, whilst the local disease is combated with epispastics, as blisters and rubefacient plasters. In erysipelas of the face, the blood should be directed towards the feet by sinapisms, or very hot flannels covered with oiled silk. All the cases of perforation of the intestines which have fallen under M. Chomel's immediate observation have been fatal. Perfect rest and abstinence was the treatment adopted, but if other cases should occur he proposes to try the plan suggested by Dr. Graves of Dublin, and put into execution by himself and Dr. Stokes, of giving large and repeated doses of opium, so as to preserve the intestines in a complete state of rest, in order to prevent the further escape of fecal matter into the peritoneum, and to allow nature to close the opening by adhesive inflammation. Opium is admirably calculated to fulfil this intention, by putting a stop to or weakening the peristaltic action of the bowels, and by soothing the excessive pain. These accomplished physicians have had some cases to justify the utility of the practice, and although it has not often succeeded, yet it has never wholly failed to assist nature under this distressing accident. We would refer those who desire complete information on this important subject to the original paper of M. Louis on perforation of the intestines in his "*Mémoires ou Recherches Anatomico-pathologiques*," p. 136, et seq.; to the 5th vol. of the Dublin Hospital Reports; or to an able article, embracing both pathology and treatment, by Dr. Stokes, in the *Cyclopedia of Practical Medicine*, (art. *Peritonitis*.) The state of the intestinal tube will explain the frequency of tedious convalescence, and the accidents to which those are subject who are recovering from this disease. When the heat of the body diminishes, even although the frequency of the pulse continues, some liquid food may be given, such as veal and chicken broth, "*le lait de poule*," milk and water, &c., augmented gradually until solid food can be digested. If the appetite does not return, and the patients are very weak, bitters should be given. Country air is very favourable to convalescence.

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## HYGIENE.

### PREVENTION OF DISEASES AMONG PRINTERS.

As we are desirous of giving substantial and available knowledge in this Journal, rather than the very last rumour of discovery or speculation, we need not apologize for now placing before our readers a statement, even though from a Journal of last year, respecting the means of preserving the health of printers. The article from which we derive our information is by M. A. Chevallier, and is contained in the *Annales d'Hygiène Publique et de Médecine Légale*, for April, 1835.

There was the greater necessity for more correct notions on this subject, after the mistakes committed by Mr. Thackrah, in his work on the *Effects of the Principal Arts, Trades and Professions, &c., on Health and Longevity*. This writer concludes



an account of the bodily infirmities and diseases with which printers are afflicted, such as of the stomach, head and eyes, and consumption, by the assertion that—"we can scarcely find or hear of any compositor above the age of 50." p. 38. Am. edit. One of the craft, after reading this, and seeing around him companions of 60, 70 and 80 years of age, would say, as a compositor did, in Paris, to M. Chevalier: "*It is very easily seen that the author of your work was not a printer.*" Cadet de Gassicourt takes a still more unfavourable view, when he says,—“such is the sickly condition of printers, that they seldom live beyond forty-five years.”

To these assertions, M. Chevalier opposes positive facts, which show that printers, in the first place, are not such sedentary (stationary?) beings as is commonly alleged; that they are not specially liable to weakness of vision, inflammatory diseases, affections of the chest, dropsy, paralysis, aneurism and diseases of the heart, scrofula and œdema; and that as respects some of them suffering from colica pictonum, hernia, sprains, swelled legs, varices and ulcers, the causes are from their own negligence or excesses; and in fine, that, according to the testimony of master printers, the workmen are not subject to any disease arising directly from their calling.

The longevity of printers is exhibited in a very different light by M. Chevalier to that in which it was presented by Thackrah and Gassicourt. In twenty-three printing-offices in Paris, the age of the workmen was respectively as follows:

No.		No.	
1	from 18 to 60 years.	13	from 40 to 50 years.
2	" 15 " 50 "	14	" 30 " 60 "
3	" 12 " 75 "	15	" 10 " 70 "
4	" 18 " 55 "	16	" 25 " 50 "
5	" 18 " 50 "	17	" 20 " 60 "
6	" 18 " 50 "	18	" 20 " 60 "
7	" 18 " 60 "	19	" 17 " 50 "
8	" 20 " 50 "	20	" 20 " 45 "
9	" 20 " 50 "	21	" 18 " 65 "
10	" 18 " 40 "	22	" 15 " 70 "
11	" 20 " 55 "	23	" 17 " 60 "
12	" 20 " 40 "		

A master printer, recently engaged in the business, told M. Chevalier that he had known more than 50 workmen, compositors or pressmen, who had passed their sixtieth year. In one office, in which there were 35 to 40 persons employed, the ages of a third of the number ranged from 45 to 70 years. A workman, named Bastard, told the author, that eighteen years ago there was a printing-office in which there were 40 workmen, the ages of 25 of whom ranged from 50 to 70 years. This establishment was jestingly named the printing-office of grey-beards (*imprimerie des birbassiers*). The names of seventeen printers are given, who still work in Paris, of whom fourteen are 70 years of age, one 80, and one 62. One man was mentioned, who worked in the office of Didot the younger, until the time of his death, which occurred when he was 86 years old; and another who was with Firmin Didot until the age of 83 or 84 years. A reference to the bills of mortality for Paris in 1831, shows the death of 25 printers or compositors, whose ages ranged from 55 to 78 years. The returns of the hospital for the aged, announce the death of four printers at the age respectively of 69, 78, 64 and 75 years.

M. Chevalier wished to ascertain the mean life of printers, and the diseases from which, during a period of ten years, they met their deaths; but the looseness and inaccuracy in the mention among the mortuary returns of the particular trade, prevented him from carrying this plan into effect.

The author terminated his investigations into the health, and liability to disease, of printers, by a question, to them of great moment, viz.: What are the practicable means for ameliorating the condition of working printers? This question was understood in very different lights by the printers to whom it was addressed. Some

looked for an entire moral regeneration of the workmen. Some advocated a liberal education, enlarged knowledge, and unlimited civil rights,—whilst others regarded such an education as a means of calling this class off from their labours and of leading them into chimerical notions and experiments. M. Chevalier's own views in the matter were, to inspire the workmen with a spirit of order and economy, by which they should spend only in proportion to their gains; to counsel them to desist from the excessive use of intoxicating drinks, from frequenting petty taverns and pot-houses, and to seek for those pleasures the indulgence in which is not degrading to man.

The greater number of employing printers thought that the means of bettering the condition of the workmen would be: 1. To insure them regular employment. 2. To check or remove their habits of extravagance, and excesses in eating and drinking, during three days in the week, and of excessive labour and injurious privations, during the remainder, in order to make up for lost time. 3. To induce them to put out their earnings in a Savings Fund, in order that they may have a resource when thrown out of employment or incapacitated from labour by old age. 4. To show them the advantages of beneficial societies and common funds in cases of disease and the infirmities of old age. 5. Finally, to convince them that excess in drink, looseness of morals, and bad conduct in general, bring in their train not only misery, but disease in various forms; and that these excesses exhaust their strength and conduct to premature old age.

The example of M. Beauvisage, dyer, is recommended as worthy of imitation. The course would be to give 8 gold medals, of the value of 40 dollars each, to those workmen who during the year should have displayed the greatest skill in labour and the most sobriety and economy. The medals to be provided by subscription among the employing or master printers. These latter might exert also a beneficial influence over their men, in admitting into their offices only those whose habits are regular, and carefully excluding those guilty of excesses in living. And again, by prompting them to reserve, on pay-days, a portion of their wages, to be put in a Savings Fund or contributed to a Beneficial Society.

The following are the counsels given by M. Chevalier to the master printers and workmen, on the subject of health and avoidance of disease. First, as relates to the duties, in this respect, of the master printers, they ought, 1. To induce their compositors to make use, sufficiently early, of glasses to preserve their sight. 2. To let them work as little as possible at night; and to substitute in the printing-offices lamps for candles, the former giving more light and being less unwholesome. 3. To have the air of the offices renewed, especially when they are being cleaned. 4. To provide the compositors with stools, since it has been ascertained that they can work seated. 5. To exact more punctuality from the pressmen, and not to allow them to make extraordinary and dangerous exertion, for three days, in order to compensate for their loss of time in dissipation during the remainder of the week; and to contrive that the pressmen who work together shall be of nearly equal strength, so that one shall not be exhausted in attempting to keep up with his companion. 6. To recommend to those who have swelled legs or feet the use of laced gaiters or stockings. 7. To warn the apprentices and compositors against the practice of holding the metallic letters in their mouth, and their consequent liability to *colica pictorum*. 8. To recommend them to wash their hands in ley and water or other alkaline wash, before they go to their meals or leave their work at other times. 9. To induce workmen who are wounded to dress their wounds carefully and to keep them clean. 10. To point out to them the necessity of their being warmer clothed, or of putting on their outer garments when they are in a perspiration and quit their work, to go into a cold room or out of doors. 11. To explain to them the dangers from intemperance in drink or in any other indulgence. 12. To keep up, in the printing-offices, an equable and medium temperature during the cold season. 13. To select and to keep sober and temperate workmen, and those noted for their correct conduct. 14. To choose dry airy places for workshops, and not to dry in them the sheets fresh from the press, which keep up a humid, and, on this account, unwholesome state of the air.

As it is the obvious interest of the workmen to carry into practice the above

details of advice, so, also, ought they to be attentive to the following considerations. 1. To renew the air of their workrooms by opening the windows at night; and to take care during the day, and especially in the evening, that there shall be a current of pure air from without, sufficient to make up for its exhaustion and vitiation caused by respiration and cutaneous transpiration, and the burning of candles. 2. To rest for a time, in season, when they are sufferers from weak eyes, or lassitude, fatigue, &c. 3. To guard against bad habits when at work, such as what in printing-offices are called *tics*. 4. To be careful not to pass from a warm or hot room to a cold one, without the attention to clothing already mentioned. 5. To work in moderation; for heavy labour, such as presswork, for example, exhausts the spring and powers of the body, and cuts off the workman from the ability to continue his trade as he advances in life. 6. To be suitably clothed, and thereby to preserve an equable warmth of the body; and to keep the feet warm by shoes adapted to the purpose. M. Chevalier counsels the use of wooden shoes (*sabots*), if the person be kept at work in a cold and damp place. And, however much our readers may smile at the thoughts of wearing wooden shoes, we can assure them, from personal experience, that they are very excellent things, especially where one has to stand for hours on the brick or stone floor of a large hall without fire. 7. To live in a becoming manner, and temperately; avoiding debauches, sometimes of days duration, to be atoned for by excessive labour and insufficient food. 8. On days of rest or holiday, to walk in the open air, and to indulge in gymnastic exercises, such as ball, running, &c., which serve to develop the muscles.

Nearly all the above salutary cautions and advice are applicable to the printers of the United States, who constitute a numerous and important class; and in whose intelligence and good conduct the country at large has a direct and manifest interest. The printer of last year is often the editor of a newspaper or a publisher this year; and hence, on his former habits and modes of thinking, mainly depend the sentiments which he promulgate and the works to which he will give currency in his new situation. Fortunately, there is much to encourage us for the future, in the marked amendment of conduct, on the score of sobriety and temperance, among the workmen in our printing-offices in this country. In this region, certainly, we can say with proper pride and pleasure, that seldom is there a printing-office disgraced with a whiskey-bottle, as was once too often the case; and much less frequently does the individual printer disgrace himself by intemperance and excesses abroad. The preservation of their health concerns the reputation of printers as a body, since it has been shown that if various diseases should afflict them, and their lives be shortened below the standard in other men, these misfortunes are not the effect of their employment, but are to be referred to their improvidence and vicious courses; and they are of course an impeachment both of their good sense as well as good conduct. To this inference there is one notable exception, not noticed by the French writer. It is the unavoidable wear and tear of frame and health amongst the printers who work during the night; as is the case with those employed in the offices of the daily papers which are issued early in the morning. Much, however, may still be done by these persons in the way of self-protection, by their attending to the rules and directions given in a preceding part of this article.

There is a remark of M. Chevalier, respecting the half-knowledge derived from superficial reading and speculative discussions on morals and politics, by the working printers of Paris, which may, perhaps, be not entirely without application to more than one of the *trades* here at home. A printer told him, that when this kind of factitious knowledge shall be replaced by solid instruction respecting their true interests and obvious duties on domestic economy, &c., the workmen would no longer be, as they now so generally are, mere *reasoners*, but that they would become truly *reasonable*.

# THE ECLECTIC JOURNAL OF MEDICINE.

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## MEDICAL EDUCATION.

IN the various discussions held on Medical Education, by the parties more immediately interested, the extremes of opinion have been too frequently presented. Without being aware of it at the time, the advocates on one side have exhibited themselves in the attitude of conservatives, doggedly opposed to all change; and those on the other, of radicals, intent on revolution, and regardless of consequences. It may seem to be an anomalous state of things, that, in the countries most benefited by, and most proud of, their free institutions, education should not only lag behind the admitted wants of the age and the requirements of freemen, but be decidedly inferior, in suitable facilities and incitements for intellectual and moral culture, to that which is enjoyed by a people living under a despotic government. France, England and the United States have now, each in succession, borne testimony to the superiority of the Prussian system of education; and they are making efforts, with more or less earnestness and regularity, to alter and amend theirs, so as to cause them in some respects to conform with the German model. We make the allusion to those incipient changes at this time, in order to show, in advance, that there is an acknowledgment of imperfection; and that he who desires to see this removed ought neither to have his intentions nor his practical sense impeached. To Europe we may, and ought naturally and properly to look for many useful hints and even adequate examples of an available system of education. Far in advance as we are of the old continent, in the workings of a system of free government and equal laws, we must, nevertheless, admit that we are wanting in some of the important means of supporting and perpetuating this enviable condition. Of these the chief is universal education; not evinced by learning names, but by acquiring a knowledge of things; not in intellectual attainments only, but in the culture of the moral feelings conjointly with these; and the proper exercise and healthful tone of the body. The copy which we, in this country, have for the most part taken is essentially and inherently bad; nor is it relieved by any applicable

ness whatever to our political and religious institutions and social state. It is the English copy, itself the imprint of feudality and monachism. In some other countries less favoured by nature, and less abounding in glorious recollections than England, education has been more fortunate; it has been begun, perhaps fortuitously, and been gradually expanded and fostered by the wisdom of the government, until it has acquired the character and usefulness of a complete system. Such has been the growth of education in Prussia. In France, the revolution, which swept away so many abuses, including the monastic system of education, substituted means of instruction in the arts and sciences, and in the two professions of law and medicine, more in unison with the wants of the people and the enlightenment of the age. Although still behind her neighbour and political rival on the other side of the Rhine, in the means for imparting a good elementary education, France exhibits to the United States many useful traits in the method of giving medical instruction, which we may properly imitate. In fine, whilst England has been stationary in her literary and scientific institutions for the higher branches, and lamentably deficient in the means of elementary instruction, or common schools,—middle Europe, France and Germany, and we might add northern Italy, have been subjecting theirs, from time to time, to salutary ameliorations so obviously required.

Into an enumeration of even the main points of contrast in the systems of education pursued in these countries and in England, we are not expected, of course, to engage in this place. Our remarks now, and those which we propose hereafter to make, will be restricted to the subject of Medical Education, as that which more directly and properly concerns the readers of this Journal. Eschewing long and elaborate disquisitions, it will be our aim to invite and fix attention on the more important and practical topics; and we shall prefer even to incur the charge of tediousness, through iteration of these, than of obscurity, by vague and protracted generalities.

Medical Education should be considered under the three heads of—1. The period of study: 2. The branches to be studied; and 3. The means and opportunities for acquiring a knowledge of these branches.

The period of study required by most, if not all, of the Medical Colleges of the United States, before a student can become a candidate for a degree and receive the authorization which this honour implies, is three years. This time is too short, even were it regularly, methodically, and faithfully taken up in the pursuit and acquisition of preparatory medical knowledge. But, when we know that, in many instances, candidates are received for examination, and obtain their diplomas, without having complied even with the form of this condition; and, that in no case does any organized corporate medical institution in our country extend uninterruptedly, throughout this period, the advantages of medical instruction, nor exercise a monitor or guiding influence over the student, we can readily understand how much of fiction there is in this regulation. The form is not complied with, when a student receives his degree, before he has completed the period of study of three years. The proper spirit is invariably lost sight of, when a student is left to wander over the extended field of medicine, without index or guide, for one or two years, before he enlists himself professedly as a member of a class in a medical college. Nor can he be said, from the date of this movement, to be placed in a proper situation to receive the lessons of experience and the guiding counsel of the professors, whose student he nominally is. After a few months attendance on their lectures, with what degree of regularity depends on himself, he is dismissed, and may go where

he listeth, for two-thirds of the year; and spend his time idly or studiously, with the same option. All that is required of him is his reappearance, after the lapse of eight months, and his attendance, once again, on a four months' course of lectures. The exceptions, in a longer term than this, will be mentioned hereafter. Supposing that he has attended, during these two winter terms, all the professors, or a first course in another school similarly organized, and the second as just described, the student may then present himself as a candidate for the degree of doctor of medicine. If he have a good memory, he will be successful, although he may be ignorant of bed-side practice or clinical medicine, and of the truly leading and important principles of medical science.

We have said that the period of three years, even were it one of *bona fide* study, is too short to allow of an attainment of the knowledge of the branches of medicine, properly preparatory to the practice of the same. In France, the period is four years: in some of the states of Germany and Italy it is five years. We are not aware that there is any necessity for extreme haste in the early career of young men with us, depending on of greater shortness of life, greater precocity of intellect, or more restricted pecuniary resources than is met with, in these several particulars, in Europe.

The period in question is, with us, subdivided in fact, though not formally and with authority, into three periods, viz.: 1, that between the date of a student's first enlisting himself with a practitioner of medicine, and beginning to read medical books, and the date at which he enters himself a member of a class in a medical college and takes the tickets of the professors; 2, that which includes the two seasons of attendance on the college; 3, that which is intermediate between these two, or three, should the student, as happens occasionally, choose to attend three courses of lectures. Our remarks on the manner in which a student passes his time in these three periods, will be more appropriate, when we take up the third head of the present inquiry, or the means and opportunities for acquiring a knowledge of the various branches of medical study. We pass on now to a consideration of the second head,—or that of the branches to be studied.

Those commonly taught in our medical schools are *Anatomy, Surgery, Materia Medica, Chemistry, Practice of Medicine, and Midwifery*. There are titles to chairs which are for the most part a dead letter, as where physiology is added to anatomy, the theory to the practice of medicine, the diseases of women and children to midwifery. Latterly, the importance of *physiology* and *pathology*, or the *Institutes of Medicine*, has been acknowledged, by a separate chair having been created in more than one medical school, and from which they are taught. The *Institutes of Surgery*, though not of equal importance, demand also a more distinct and wider survey than is taken in the usual courses of surgery.

Chemistry has not yet, among us, been taught with a view to its shedding the requisite light on the composition and changes, functional and otherwise, of the animal solids and fluids, and of the means acting on these, and of the changes induced in them by chemical agents introduced into the animal economy. In other words, *animal chemistry* does not receive its proper share of attention.

*Clinical medicine* and *clinical surgery* are not taught *ex professo*, though they sometimes are by professors in a medical school, if they have received the appointment of physician and surgeon, respectively, to a hospital. But as the latter is under a different government from the college, and swayed by different, and, it may be at times, adverse influences, the latter institution can give no security to the student, as,

indeed, it exacts no pledge from him for his regular initiation into the all-important mysteries of clinical medicine and surgery. His being required, previously to coming up for examination, to show a ticket of admission to the practice of a hospital, is not the kind of proof which a student ought to exhibit of his having attended to these important matters.

*Therapeutics*, sometimes included in the Institutes of Medicine, is of sufficient importance to be taught with a fulness and distinctness which it is far from receiving in any of our institutions. Connecting *materia medica* with clinical medicine, therapeutics gives a value to lectures, or writings and disquisitions on what is called the practice of medicine, which this last would otherwise fail to possess.

*Botany*, necessary for a full knowledge of the articles of the *materia medica*, derived from the vegetable kingdom, as chemistry is to a just appreciation of those from the mineral kingdom, is almost entirely neglected in the customary courses of instruction in our medical colleges. It follows that *vegetable physiology*, so illustrative of the functions of animal structure, is also overlooked. *Medical Jurisprudence*, nominally taught in different colleges, receives, we believe, in no one that extended notice which its importance merits. The fact of the best work, in the English language, on this subject, having been written by two American physicians and lecturers,\* shows, that there is no lack of the necessary talent, attainments and industry, to give it value and effect. With a little more encouragement from the governors of medical institutions, and a little more zeal on the part of medical professors, a knowledge of medical jurisprudence, now possessed by a very small number, might be diffused throughout the whole profession.

*Hygiene*, the most practical and available of all the branches which should engage the attention of the physician;—that which constantly and more immediately relates to man's physical comfort and well-being, as well as to his intellectual and moral elevation, is almost uniformly lost sight of, in medical education on this side of the Atlantic.

In the above sketch of what is taught and what is neglected to be taught in our medical colleges, it is far from being our intention to cast all the blame of omission on their trustees and professors. Some, we should rather say nearly all the advocates of reform in medical education, seem to think that these persons in their official capacity have the power to do away with every existing abuse, and to establish a millenium of intelligence and ethics in our profession. A similarly short-sighted view of things has been generally taken by political reformers in different ages of the world, and, of late years, in different parts of Europe. They fondly persuaded themselves that they had but to copy the Constitution of a really free people, and have it published and sworn to in their own country, in order to realize, in the latter, all the benefits that had been obviously enjoyed by the former. This sending about of a stereotyped copy is not however, by any means, sufficient. There must have been, antecedently, the intelligence to understand, and the spirit to maintain, its provisions, without which it is a dead letter. Our medical colleges have much in their power in the way of salutary reform; but unless they be seconded by the members of the profession and an intelligent community at large, their efforts will be comparatively unproductive of the hoped-for good. The dependence and connexion of these several agencies in medical education, will be

\* Drs. Theodric Romeyn Beck and John B. Beck: *Elements of Medical Jurisprudence*. The fifth edition was published last year (1835).

exhibited with adequate clearness in our remarks on the third head under which we proposed to examine the subject: viz., the means and opportunities for acquiring a knowledge of the several branches of medicine. These are best introduced to notice by placing them in reference to the three divisions of the entire period of study, such as we have already laid down.

In the first period, or that comprised between the date of a student's entering the office of a practising physician, and that of his enrolling himself as a member of a class of some medical college, there is very little monitory or controlling influence exerted over him. There can be none, certainly, by the college to which he may eventually go, but which, until the time of his arrival and presenting himself before the dean of the faculty, has no knowledge of his intention, nor of the fact of his being devoted to the study of medicine. Of his fitness, on the score of conduct, capacity, and attainments in general literature and elementary science, there is no regular nor responsible tribunal to take cognizance and pronounce opinion. A parent wishes his son to study medicine, and applies to his family physician, or to some medical friend, to become his preceptor. The request is acceded to, and a fee is paid to the latter by the applicant for the youth, who is made soon aware that he is in the way to become a doctor by his at once receiving the title from certain friends, acquaintances and dependents. Beyond this, however, the fitting means are not taken with any expedition or method. His *quasi* preceptor puts a work on *Materia Medica* into his hand, and, if in the country, tells him that he will find the medicines, about which he reads, on the shelves of the shop; or, perhaps, he may give him a work on *Anatomy* for perusal, and a few dry bones for illustration of a still drier text. Into a knowledge, by the youth, of English composition, to say nothing of classical lore and of the elements of natural philosophy and chemistry, his mentor either does not inquire, or if he do, it is for mere form, since a deficiency in these respects would seldom be thought to justify his refusing to receive him under his charge. Were these deficiencies to be detected, and the serious impediments which they present to obtaining medical knowledge pointed out, the fond parent, angry at such fastidiousness, would merely apply to another physician who had less of this quality in the matter, and place his son with him.

It is evident, then, that, at the very outset, injury may be and often is done to the cause of medical education, and to the dignity and character of the profession, by a youth being urged into its ranks, who, through primary incapacity and deficient elementary knowledge, is unfitted to master the various branches of medicine, even were opportunities for doing so furnished to him. The wrong here is done by the parent or guardian and friends, as the case may be, of the youthful aspirant. The connexion between a liberal education and the study and practice of a liberal profession, is so little seen by any of these parties, that the fact of a youth being unfitted, by slowness of thought and indolence of movement, from taking an active part in the common mercantile or agricultural pursuits of the head of the family, is made an argument in favour of his studying medicine, or, a still worse case, divinity.

The mental qualifications of a youth, those on which his subsequent usefulness, both as a student and practitioner of medicine, so much depend, are not, we have shown, moulded by medical men or medical institutions. They must be the result of parental training and academic and common collegiate tuition. But physicians, of whatever station, whether simple practitioners or public teachers, singly or combined, belonging to associations corporated or incorporated, have still much in



their power in the way of influential suggestion. They are clearly bound by professional duty, we were about to say honour and dignity, which comprise efficiency for rendering the greatest amount of good, to uniformly and consistently explain, on all proper occasions, to the members of the community with whom they associate, and especially to heads of families with whom they hold relations of intimacy and friendship, the paramount necessity of good capacity and an acquaintance with classical learning and the elements of science, as a preparation for the study of medicine.

Formally and officially should it be the duty of the heads of medical colleges to promulgate the number and order of subjects of study, and to point out the bearing which parts of natural philosophy, chemistry, botany, zoology, geology, and geography have on the various branches of medicine. Steadily should they insist on ample qualifications for the study of the profession, and dwell on the time to be passed, and the care and assiduity to be displayed, before the honours of a degree could be reached. Documents consisting of these views and outlines should be freely circulated, and placed in the hands of every physician in the country, who would thus be strengthened in the advice which he might find it his duty to offer to the parent or guardian desirous that his son or ward should study medicine.

To the physician who takes the part of preceptor, these collegiate circulars would have an additional value, by aiding him to carry out, in proper order and sequence, a plan of study for his pupil during the period which is terminated by the latter going on to the city to attend lectures. This period, commonly spent with comparatively little profit, on the score of improvement, might, with better management, be rendered exceedingly productive, both of present satisfaction and future advantage to the student. If he be, as is most commonly the case, either a resident of the country, or of a village or country town, with immediate access to the woods and fields, he can begin at once to learn the rudiments of Botany, and see and appreciate its connexion with the study of *Materia Medica*. He will in this way acquire, also, a means of amusement, which, in his walks and rides in after life, will be found a resource against the tedium and loneliness of country practice, and perhaps even a preventive against enervating and debasing habits. Illustrative of the structure and functions of the human body, and contributing to the same good end, will be a study of the outlines of zoology, so far as it can be carried by examples in the animals, domestic and wild, in his immediate vicinity.

Antecedently to this, it would be desirable, as it might be in a measure easy, for him to obtain a knowledge of elementary Anatomy. The skeleton, we will suppose, is placed before him by his preceptor, and osteology thoroughly learned. The general arrangement and mode of origin and insertion of muscles,—the structure of the heart and lungs, their connexion, and that between them and the blood-vessels,—the structure and general division of the viscera,—and the structure of the senses of sight and taste and smell, could be readily enough exhibited in the dissection of a domestic quadruped. For the digestive apparatus, that of a carnivorous animal should be chosen. Nor would the student fail to derive information from a display of its brain and nerves, care being taken whilst pointing out the structure of the former, to indicate the difference between it and the human brain.

General Anatomy, with its attractive classification of textures and systems, might be easily learned by observing the organization of the body of any of the common quadrupeds, and the way thus prepared for the study of physiology.

But, whilst we point out the means by which the outlines of anatomy can be learned from dissection of the inferior animals, we are far from supposing that the

student is necessarily debarred from studying the human subject. His preceptor, if intent on furnishing him with all the aid in his power, can avail of an occasional opportunity for *post mortem* examination, to exhibit the general appearance and situation of the viscera, and even for regular dissection of a subject which chance leaves unreclaimed by friends; due care, of course, being used, not to wound the feelings, or shock any natural prejudice by needless display or exposure. We are the more desirous of giving this caution, from having ourselves, in the period of preliminary study, been so unfortunate as to incur the temporary anger of a relative of the little being examined. Even at this day, we feel grateful to the good sense of the law-officer who evaded publicity to the affair, because he could appreciate the goodness of our motives in making the examination of the dead, and our innocence of all intentional annoyance to the living, who afterwards received us into favour. It would be very easy for a physician, who intends to make anatomical demonstrations on a subject thrown in his way, in the chance manner already noticed, to extend the advantages to all the students in the place, by inviting them, as well as those in the country for some distance around, to participate in the lesson. A day or two spent from their homes, in this way, would be a period of profitable instruction and singularly facilitate their future studies.

An elementary knowledge of *Materia Medica* and of *Pharmacy* is obtained with comparative ease by the country student, from the circumstance of his preceptor having all the medicines for common and even for occasional use, and of his requiring the former to mix and compound the extemporaneous prescriptions of pills, powders, unguents, infusions and tinctures, directed for the sick. With comparatively little pains, on the part of both preceptor and student, the latter can soon learn, even supposing him to be still ignorant of the subject, the elements of *Chemistry*, so as to allow of his understanding the application of this branch both to *Pharmacy* and to *Physiology*.

It is evident, then, that a student who has exercised suitable industry, and who has been properly assisted by the counsel of his preceptor, can acquire a knowledge of the elements of botany, *materia medica*, chemistry, anatomy, general and special, and physiology, during a period which is commonly passed in desultory reading, without aim and without distinct recollection of any series of useful facts or any guiding principle. In the common fashion of country study, and, in many instances, it might be added, of city study, also, the youth is left to ramble nearly as he chooses, or as he may chance to light upon books, over the whole field of medical reading; hypotheses and wild speculations being more attended to and better remembered than valuable and available facts. On the other hand, were his time spent in the manner suggested above, he would be prepared to listen with understanding to the winter lectures at a medical college. He would enter this latter with a mind stored with that elementary knowledge of the branches of medicine, which is so necessary for his appreciating or even turning to any account the lectures on the higher and more complex ones of *Pathology*, *Surgery*, *Midwifery*, and the *Practice of Medicine*, including *Clinical Medicine* and *Clinical Surgery*.

Until a better method of medical study be introduced and practised during the period preceding their arrival in some one of our cities and entrance into a medical college, the students are unfitted to avail of the means of instruction presented by this latter. Collegiate education, therefore, in medicine, is not, as yet, adapted to the wants of the youth who resort to it. Adequate provision is not made for supplying deficiencies in the previous period of their study, by teaching them,

when they become alumni of the college, the elementary branches, the grammar as it were of the science, first, and leading them on, afterwards, to the more difficult and abstruse subjects. Their attention is invoked, at once, to both simple and complex, plain and recondite. They hear familiar reference made to parts of the body by the lecturer on physiology which have never yet been placed before them in anatomical teaching; and they listen to disquisitions on derangement of function and the treatment of disease before they have learned the healthy state of the organ, and the doses, properties, and combinations of the medicines recommended. There is a pile of materials, for thought and future action, accumulated before them by many hands, but of which they have neither the skill, nor the time, nor the training to turn to proper use. By an uncommon effort some of them may, perhaps, put it away in the store house of memory; but it will be wanting in arrangement; and that which they may subsequently most need at a moment's notice will be overlaid by other uncalled for and unwanted matters.

Where all the branches taught are necessary for a student's instruction, and as far as our own observation goes they are well taught, the question which immediately presents itself is, by what means are they to be presented in the sequence necessary for their being fully understood and rendered applicable to the design of their founders. The first and most imperative measure of reform of the evils pointed out is, to extend the period of collegiate medical instruction, so that the college shall exert more than a nominal or, at least, transitory influence and guidance over the studies of the youth who resort to it in quest, not alone of instruction, but of an alleged and generally admitted test of some learning and merit, the degree of doctorate in medicine. A longer period is required in justice both to students and to professors: to the former that they may have time to learn; to the latter that they may have time to teach after a more natural method, in the connexion and sequence of subjects. We are glad to learn that a better order of things has been begun, in the medical faculty of the University of Pennsylvania having determined to extend the course of lectures through the month of March, so as to make the period five in place of four months as heretofore. The Medical College of Georgia, in a still more enlarged spirit of improvement, has decreed that its course shall consist of lectures to be given for a period of six months.

Farther suggestions in this important matter, respecting the means of collegiate instruction, and the manner in which the student should, but too commonly does not, spend his time, during the period between the winter lectures, will be, perhaps, offered in a future number of this Journal.

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## THE MEDICAL COLLEGE OF PHILADELPHIA.

We have now before us a printed copy of the "Constitution and By-Laws of the Medical College of Philadelphia." In Article II. of the Constitution we read as follows:—

"The objects of the said College shall be to cultivate the science of medicine, and all its collateral branches; to designate such courses of instruction as, from time to time, may be deemed necessary for the advancement of the science, and the

elevation of the medical character; to examine and decide on the qualifications of candidates for degrees, and to secure these advantages to the profession."

The officers of the college are a President, (Dr. Thomas T. Hewson,) two Vice Presidents, (Drs. Charles D. Meigs and Thomas Harris,) a Treasurer, (Dr. Henry Bond,) and a Recording Secretary, (Dr. Robert Bridges.) These offices are to be filled at annual election.

It is prescribed, in Art. VII. of the Constitution, that a Board of Examiners, to consist of not less than six persons, physicians, resident in the city and county of Philadelphia, shall be chosen on or before the first day of June, 1837; whose duty it shall be to test the qualifications of such students or others as may appear before them, and to certify the same to the College.

In the By-Laws it is prescribed that these examiners shall be graduates of medicine, of at least ten years standing, and of distinguished reputation in their profession, each of whom shall have attained the age of thirty-five years. Two shall vacate their places annually, and be replaced by two other members of the College possessing the requisite qualifications, and elected, as the first, by the members of this body.

It is specially ordered, that a person, elected as an examiner, shall not be, for the time, a lecturer, or engaged in giving public instruction, whether by lectures or examinations, upon any branch of medical science included in the course prescribed by the College. To engage at any time during his term of service in lecturing as above, will be to vacate his seat in the Board of Examiners.

The College itself is composed of members and associates. The conditions for being proposed for a member are, that the candidate be a citizen of the United States, shall have attained the age of twenty-five years, shall have been a graduate of three years' standing, and a resident of the city and county of Philadelphia for at least twelve months preceding his nomination.

Any physician, who is a citizen of the United States, of well-known and distinguished merit, not resident in Philadelphia, may be nominated and elected an associate of the College. Associates shall enjoy all the rights of membership excepting those of voting and eligibility to office.

Under the head of "Meetings and Rules of Order," the quorum required for enacting or altering a by-law shall be thirty members, and that for electing examiners twenty. In all other cases the members present shall constitute a quorum.

The *Board of Examiners* is to meet regularly during the months of March and November of every year, for the examination of such candidates for the degree of doctor of medicine as have complied with the requisitions of the College, and duly registered their names with the Dean.

The Board is allowed to make such a distribution among its members of the branches, on which it examines, as it shall judge proper.

Not less than one hour is to be devoted by the Board to the examination of each candidate; nor are more than four candidates to be examined on the same day.

To warrant a favourable report of the qualifications of the candidate, it is required that four members of the Board vote in the affirmative.

No member of the Board of Examiners will be permitted to express an opinion, or to vote upon the professional attainments of a candidate, who is at the time, or has been, his private pupil.

The expenses of the Examiners, and the sum allowed them for examining candidates, are to be paid out of the treasury of the College.

In order to be received as a candidate for the degree of Doctor of Medicine from the College, the individual must have attained twenty-one years of age; have studied medicine for the term of *at least* three years as a private pupil under the direction of one or more regular practitioners; have attended lectures on each of the following branches, delivered by lecturers recognized by the College, and during the number of courses specified of each:—

1. Anatomy, General and Special,—two courses.
2. Chemistry,—two courses.
3. Institutes of Medicine, or Physiology and Pathology,—two courses.
4. Materia Medica and Pharmacy,—two courses.
5. Practice of Medicine,—two courses.
6. Institutes and Practice of Surgery,—two courses.
7. Obstetrics,—two courses.
8. Diseases of Women and Children,—one course.
9. Medical Botany and Vegetable Physiology,—one course.
10. Medical Jurisprudence,—one course.
11. Hygiene and Medical Police,—one course.

The candidate must also have pursued at least one course of dissections under the direction of a teacher recognized by the College; and have attended for at least one year the practice of some hospital or infirmary recognized by the College, and in which clinical instruction is given.

A candidate for examination is required to register his name with the Dean during either the month of February or November; and at the time of the registry he is to present to the Dean satisfactory evidence of his having attained the legal age; a certificate from his preceptor or preceptors, that his medical studies have extended to the full period of three years; and, also, the tickets or certificates showing that he has attended the number of courses of instruction delivered by recognized lecturers and teachers.

The candidate shall, likewise, at the time of registry, present the Dean a thesis of his own composition on some medical subject, and also the history in writing of two cases, the one medical and the other surgical, which he has observed and investigated in some public institution, in the private practice of his preceptor, or otherwise.

The examination shall be conducted by oral and written questions, to be answered accordingly, orally or in writing, and shall embrace the thesis and cases presented by the candidate, as well as medicine in general. The candidate shall likewise be required to write prescriptions in Latin, both abbreviated and at length, agreeably to the customary formulæ.

Each candidate is to pay to the Dean, at the time of his registry, the sum of thirty dollars, as the fee for examination; and he shall pay an additional sum of five dollars for his diploma, should he be approved of by the Board of Examiners.

All diplomas for degrees in medicine granted by the College, shall be signed by the members of the Board of Examiners, and by the President, Vice President, and Corresponding Secretary,—which officers shall have the right of being present at all examinations.

Provision is made for the *recognition of lecturers* by the College. Any respectable graduate in medicine who is engaged in lecturing on any one of the branches embraced in the scheme of instruction laid down for the time being by the College, and who has delivered one or more courses of lectures thereon, may be proposed as a candidate for recognition at any stated meeting of the Board of Examiners.

A memorial, signed by a hundred and twenty-six physicians, residents and practitioners in Philadelphia, has been sent to Harrisburg, asking for an act of incorporation for the new College. We believe that we do no injustice to our brethren when we say, that, with very few exceptions indeed, every name, not of the two chartered schools, of professional note, either as practitioner, writer, or lecturer in the city, is signed to the memorial. The professors of these two schools could not, of course, from motives of proper delicacy, be either invited or offer to become members of the new College; but there is good evidence for believing that no hostile feeling is entertained towards it by them, in at least their collective capacity.

The chief and characteristic features of the *Medical College of Philadelphia*, are—

1. The encouragement held out to a greater number of lecturers than heretofore to teach the various branches of medicine, and to students to attend to and learn the same, at all times of the year, without restriction to a particular season.
2. No *special faculty* is connected with or forms a part of the College, and consequently, no advantages will be obtained to any lecturer or number of lectures over another, or others, except as shall be gained by talents, learning, and industry.
3. No invidious distinction is made among other Colleges—all being on an equal footing, as are all lecturers in every part of the Union, with the sole provision, that they give, respectively, full courses on the branches which they presume to teach.
4. The standard of medical education is raised, and at the same time inducements held out to lecturers to supply the deficiencies which are shown to exist in the common courses of instruction.
5. Students, no longer restricted to a particular circle of branches taught within a limited and short time, can now take a wider range of inquiry, glean knowledge from all quarters, at all times throughout the year; and in so doing, both prepare themselves for obtaining a degree, and the still more important object of practising medicine with success.
6. Those students who shall intend to take a degree in Philadelphia, will have stronger incentives than heretofore for applying themselves diligently, and availing eagerly of all the means of acquiring preliminary medical information, during the early period of their study at home.
7. No bias can be felt or displayed by the examiners of a candidate for a degree, since they are not lecturers; and they can have no personal or party interest in his success.
8. In carrying out the present laws of the College, as well as in making any subsequent changes in the plan of education, reference will always be had to the real state and real wants of the medical profession, for the reason that the members of the former are taken from the latter, and that salutary reforms, as needed by the progress of medical science, will always be made, owing to the composition and constitution of the College, which rests on the proper democratic basis of numbers and intelligence, in the party whose interests are at stake.

It is believed that the expenses of medical education recommended by the College, need not be greater than is incurred under existing arrangements. In addition to the winter courses of lectures in the already chartered schools, summer courses by private teachers singly, or associated, will become immediately available for graduation, and the student will in future be able to make his arrangements for a course of study throughout the year, and divide his time accordingly, without his being subjected to excessive intellectual toil in one portion of the year, and the risk of want of occupation, and of habits of indolence during the remaining portion.

The motives by which the friends of the new College have been actuated, are, we believe, entirely correspondent with the objects, such as we have stated them. Towards their Alma Mater, the University of Pennsylvania, its trustees and pro-

fessors, their feelings are, we doubt not, entirely amicable; and every change is advocated in a sincere spirit of what is thought to be a desirable and salutary reform, and without the slightest wish of personal injury or wrong to any of the parties just mentioned. The same remark will be found applicable to the other chartered school in this city. For ourselves and our immediate personal friends, who have signed the memorial and have become members of the new College, we may go still further, and declare, that it is as foreign from our feelings as from our interests to place ourselves in hostile array against the gentlemen of the medical faculty of the University, with some of whom we have had the privilege and pleasure of being associated as teachers in the *Medical Institute of Philadelphia*, during the summer months for many years past. To one of these gentlemen, the founder of this institution, we are, ourselves, under strong and lasting obligations, not the less felt because seldom obtruded on public notice, and which we have now the more pride in acknowledging, at a time when we are comparatively independent of a continuance of the favours through which they were incurred.

It is but an act of simple justice to state, as we now, with a knowledge of the circumstances, distinctly do, that no member of the medical profession, whether teacher, or otherwise employed and distinguished, has contributed so much to induce the medical students throughout the Union to make Philadelphia their abiding place, during the period intervening between the winter courses, as Dr. Chapman has done, by taking on himself, in conjunction with friends and associates, whom he rallied around him, the additional trouble of lecturing during the summer months. This tribute of praise is strictly due to the founder of the Medical Institute, and is with the more propriety introduced, when we are discussing the policy and advantages of holding out inducements to students to come on and spend the greater part of the period of their medical studies in Philadelphia. During this time, prompted by a love of knowledge, very many have, for years past, voluntarily remained here, and, in doing so, if we can credit their testimony so often and spontaneously offered, they have been well requited for their time and expense. It has been, we know, objected to this institution, that its lecturers, many of whom are professors in the University, attract students to it, irrespective of the actual information which is given, and in injurious rivalry, or rather ascendancy, over other lecturers or associations not similarly favoured in this respect. The new College will remove this ground of complaint, by rendering every course of lectures, whether in the University, Jefferson College, Medical Institute, or elsewhere, available towards a degree from it. Sure we are, that the competition, which would be opened more fully than at present amongst all private lecturers, will not be objected to by the gentlemen of the Medical Institute. Of this we have undoubted evidence, in the fact of one of the vice presidents of the new College being a lecturer at the Medical Institute; and of another of his associates in this latter having taken a full share in the deliberation preceding the formation of the College, and in the framing of its Constitution and By-Laws.

In fine, whatever may be the ultimate success of the Medical College of Philadelphia, we sincerely believe, that no other plan could be presented for action which promises the same amount of benefit to the medical profession at large, and which would remove all reasonable ground of complaint on the part of private lecturers, who claim a fair field for the display of their talents and learning on the one side, and of students, who ask for increased facilities and more enlarged means of medical education than heretofore, on the other.

## UNIVERSITY OF LONDON.

It may, perhaps, be known to most of our readers, that the University of London, so called, had not enjoyed the benefit of a charter for conferring degrees, although some of the Faculties, that of Medicine particularly, have been in complete and regular operation for some years. At length a charter is about to be granted by the king, with the same title, but entirely distinct from the former or any other institution. Curiously enough, this instrument resembles in some of its most important features the constitution of the Medical College of Philadelphia, and will realize, when it takes effect, the hopes of the most sanguine medical reformers of Great Britain. In our opening article, in the present number of the Journal, we adverted to the defective state of the institutions, in that country, for education in general; and we may find in the reforms now in progress, or about to be undertaken there, both an evidence of the faultiness of the former system and an encouragement to avail of the present amelioration for our own guidance.

The charter of the London University provides for the organization of one body politic and corporate, to consist of a chancellor, vice-chancellor, and fellows, or members of a senate to be appointed by the king. The number of fellows is not specified; but it is ordained that no question shall be decided at any meeting, unless the chancellor, or vice-chancellor, and five fellows, or in the absence of the chancellor and vice-chancellor, unless six fellows, at the least, shall be present at the time of such decision. With this body rests the appointment and removal, as they shall find occasion, of all necessary examiners, officers, and servants of the University. The examiners may either be elected from among the fellows, or appointed by these latter without being of their number.

Once at least in every year the chancellor, vice-chancellor, and fellows shall cause to be held an examination of candidates for degrees, and on every such examination the candidates shall be examined by examiners appointed in the manner just stated. The candidates shall be examined in as many branches of general knowledge as the said chancellor, vice-chancellor and fellows shall consider the most fitting subjects of such examination.

The next provision is almost identical with that in the new college here; and is the most characteristic feature both of it and the charter of the London University. It is that all persons shall be admitted as candidates for the degrees of Bachelor of Medicine and Doctor of Medicine, on their presenting to the chancellor, vice-chancellor and fellows a certificate from a recognised institution or school, to the effect that such candidates have completed the course of instruction previously announced as necessary by the said chancellor, vice-chancellor and fellows.

The mode of recognition of institutions and schools by the University is thus decreed:—The chancellor, vice-chancellor and fellows shall from time to time report to one of the principal Secretaries of State what appear to them to be the medical institutions and schools, *whether corporate or incorporated*, in London or in other parts of the United Kingdom, from which in the judgment of the chancellor, vice-chancellor and fellows it may be fit and expedient to admit candidates for medical degrees; and on approval of such report by the said secretary of state, they shall admit all persons as candidates for the respective degrees of Bachelor of Medicine and Doctor of Medicine, who present a certificate from any such institution or school.

It is in the power of the corporate body (chancellor, &c.) from time to time, with



the approval of one of the secretaries of state, to vary, alter, and amend any such reports, by striking out any of the said institutions or schools included therein, or by adding others thereunto.

All reasonable fees for the degrees conferred (which includes, of course, by the *University* charter, those on the Arts and Sciences as well as in Medicine) are to be charged by the chancellor, &c., with the approbation of the commissioners of the treasury; and such fees shall be carried to one general fee-fund for the payment of the expenses of the University, under the directions and regulations of the commissioners of the treasury, to whom the account of income and expenditure of the University shall once in every year be submitted.

We see from the above, that the candidate may obtain his knowledge in town or country; provided always, that the school in which he has studied be properly qualified to afford adequate medical instruction. Of course all proper and recognised schools of medicine will be entitled to send up candidates for degrees, after passing through the regular curricula to be examined at the metropolitan board.

This arrangement is identical with that made by the Medical College of Philadelphia. In regard to the source of power possessed by the examiners, there is such a difference as might be expected between a regal mandate and a constitution framed by a voluntary association on democratic principles. In the London University, the body corporate, chancellor, vice-chancellor and fellows or senate are appointed by the king. In the Philadelphia College, the body corporate is composed of a large number of physicians, with whom a professional brother is free to associate on conditions easy of fulfilment. The examiners are elected out of the college with us, as they are out of the fellows in England; but the power of recognition of schools and institutions does not rest with our examiners; it is retained by the college: and thus any chance of personal bias one way or another or manœuvre of a privileged few is prevented. To neither is attached any special faculty; for what has been called the University of London hitherto and properly, now '*London College*,' will have no more privileges than '*King's College*,' nor either of them any more than the school of Guy's or that of Bartholomew's Hospital. So, with us, the medical schools of Philadelphia will have no privilege more than the school of Boston or of Charleston, in the case of students from either of these latter coming on to Philadelphia to obtain a degree in the new College.

*The Dispensatory of the United States of America.* By GEORGE B. WOOD, M.D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania, Member of the American Philosophical Society, etc. etc., and FRANKLIN BACHE, M.D., Professor of Chemistry in the Philadelphia College of Pharmacy, one of the Secretaries of the American Philosophical Society, etc. etc. THIRD EDITION, enlarged and carefully revised. Philadelphia: Grigg and Elliott. 1836.

THE scientific copartnership engaged in between Doctors Wood and Bache, with a view to the production of a Dispensatory, has been eminently fortunate for their medical brethren throughout the United States. It has resulted in their giving us a work better calculated than, we believe we may say, any other in the English

language, for reference in all the essential points and details of *Materia Medica* and *Pharmacy*.

We learn in the Preface to the present edition, that in preparing it "the authors bestowed much labour upon the work, correcting errors, curtailing superfluities, and supplying deficiencies, whenever observed, and enlarging the original plan by the addition of an Appendix, containing notices and descriptions of numerous drugs which, though not recognised in the American or British Pharmacopœias, were possessed of some interest from their former or existing relation to Medicine and Pharmacy." In this respect the present is exempt from the charge to which the first edition was open, viz. of needless purism, by restriction to the combinations noticed and acknowledged in the Pharmacopœias. The physician, whether in town or country, cannot readily bear in mind either the precise dose of article of the *Materia Medica* not in common use, but of which he from time to time may wish to make trial; still less is he able to remember the combinations of various medical substances, either officinal or which have become popular in extemporaneous prescription. Hence the necessity of a work of reference like the present, in which satisfactory information can be obtained on all points.

The value of the present edition is enhanced, also, by a transfer of the account of substances not included in officinal catalogues from the *Materia Medica* portion of the work to the Appendix. In this latter has been introduced a table of pharmaceutical equivalents, calculated to add to the scientific interest of the *Dispensatory*, which already abounded in various and excellent practical matter.

When so many works intrinsically good are published and reprinted among us in such a detestable style, we ought not to withhold our praise from the present edition of the *Dispensatory*, which, both in paper and type, is an improvement on its predecessors of the family.

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## PHYSIOLOGY.

### EXPERIMENTS ON THE BRAIN, SPINAL MARROW, AND NERVES.

By Professor MAYER, of Bonn.

AMONG the physiologists who have endeavoured to investigate the functions of the brain and nervous system in modern times, Professor Mayer places Sir C. Bell foremost on the list; adding the names of Rolando, Bellingeri, Magendie, and Flourens. The experiments of Flourens are some of the most important on this subject, but the great objection to them is the extensive injury which was unavoidably produced upon the brain, its nerves, and vessels, during these experiments; so that the precise effects upon the brain were probably more or less modified by the effects of the operations. Professor Mayer's object has been to repeat the experiments on a more simple plan; to avoid opening the cavity of the cranium, wounding the vessels, the severe hemorrhage, and exposure of the wounded parts to the atmospheric air; and thus to make the result more simple and certain. He has endeavoured to determine how far the influence which the activity of the brain exerts upon the organic system is disturbed, where, without having undergone any injury, its supply of blood, which we must look upon as the chief source of its vitality and activity, has been partly or wholly cut off.

We may effect this object in two ways: viz. by tying the arteries which supply the brain, and by injecting some foreign fluid into these vessels. With regard to the first method, this chiefly refers to putting a ligature upon the two carotids, be-

cause tying the vertebral arteries at the same time is not only almost impossible to effect, but, as we shall also find, is instantly fatal. On the other hand, putting a ligature upon both carotids, and also upon one subclavian, may be effected, as will be seen shortly.

From numerous experiments of the kind just indicated, Dr. Mayer draws the following conclusions:

1st. That a healthy state of the cerebral activity is the necessary condition of life: in other words, the encephalum (viz. the brain, cerebellum, and medulla oblongata,) is the peculiar source of vital power,—the *fons vitalis*.

2d. The medulla spinalis, of itself, is not sufficient for the continuance of life, as its own life depends upon the vital energy of the encephalum.

3d. The vertigo and inability of preserving the upright posture is also a result of impeded cerebral activity. We are scarcely justified in attributing these effects to an injured state of the functions of the cerebellum, because, even in the experiments where the vertebral arteries are tied, the cerebellum receives a sufficient supply of blood.

4th. These experiments, moreover, tend to show that the brain directs and guides the vital functions. The cause or principle of the vital functions (viz. the circulation, respiration, nutrition, animal heat, &c.) is not in the encephalum, but the impulse to exert these functions of vegetable life emanate from it; and they cease when the encephalum sinks into inaction.

The physiological researches, especially during the last thirty years, both in this country and the continent, have satisfactorily proved that most, if not all, of the agents which exert such destructive energies on the nervous system do it through the medium of the circulation: this has been shown by the experiments of Christison and Coindet, of Brodie, Emmert, Viborg, and many others. Those of Sir B. Brodie on the action of the woorara poison are well known. Emmert showed this to be the case in a still more striking manner, by amputating the leg of an animal, and leaving it connected with the body only by means of the nerves: poisonous substances introduced into the foot produced no effects, not even when applied to the trunk of the nerve; and Viborg even applied one drachm of concentrated prussic acid to the brain of a horse which had been exposed by trepanning, without producing any effect. The experiments of Dupuy\* on the contamination of the vital current strikingly confirm Dr. Mayer's observations. He found that injecting water, in which muscle had been soaked for four and a half years, produced symptoms in animals precisely similar to those of typhus; viz. debility, loss of sight, coma, falling of the head, &c. Gaspard † also injected mercury (half an ounce) into the carotid of a sheep, which produced insensibility, coma, and death in fifty minutes; but he does not appear to have carried the subject further in this direction, or to have made any practical deductions from it.

"The impulse," says Professor Mayer, "and the feeling of necessity to keep in action the vital functions, has its seat in the encephalum. Thus, when we reverse the experiment, and separate the head and brain from the trunk, especially in new-born animals, we observe symptoms of the above-mentioned impulse in the decapitated head. The heads of newly-born puppies or kittens, when thus separated from the body, suck the finger which is put into the mouth for ten or fifteen minutes. Attempts at respiration are made by opening the mouth, (a fact first noticed by Le Gallois,) and by the glottis alternately opening and shutting."

Dr. M.'s fifth and last inference is, "that the above-mentioned experiments tend to prove, beyond doubt, that the circulation, the production of animal heat, and lastly nutrition and secretion, depend on the activity of the encephalum, and they stop when it stops; moreover, that the impulse to the continuance of these functions proceeds from the encephalum. It cannot be denied that a variety of causes connected with these functions have their seat in the body; but the main-spring, which sets all the wheels of the vital functions in motion, and without which they stop, resides in the encephalum."

Experiments have shown that the most vital part of the encephalum extends from

\* Injection des Matières putrides dans la Veine Jugulaire du Cheval. Nouv. Bibl. Méd. 1823, Jan., p. 90.

† Mémoire Physiologique sur le Mercure. Magendie's Journal, t. i. No. 2, p. 165.

the pons Varolii along the whole medulla oblongata, and at least as far as the second cervical nerve of the spinal marrow; in any part of which a wound is instantly fatal; that, as we descend along the medulla spinalis below this point, or ascend to the brain and cerebellum above it, the effects of injuries become gradually less fatal and dangerous. Professor Mayer's object therefore has been to subject this *centrum vitale* to a minute and rigorous examination, and he has shown it to be a rich field for observation and discovery.

The results of Professor Mayer's researches on the origin of the glosso-pharyngeal nerve, the par vagum, the hypoglossus, spinal accessory, and first cervical nerves, is to show that, of these, the hypoglossus, the spinal accessory, and first cervical, belong to that class of nerves which possess the double faculty of sensation and motion. The question is, does not this compound structure enter more deeply into the organization of the nervous system; or, in other words, shall we not find evidences of it in the phrenic, and even in the sympathetic nerves?

"With regard to the phrenic nerve," says M. Mayer, "I am aware of no researches in which its origin has been traced farther into the fourth cervical nerve. Fig. 1 not only shows the manner in which the phrenic gives off four twigs to the ganglion spinale of the fourth cervical nerve, but is also continued by means of two others along the anterior root of this nerve into the spinal column, so that we may justly say that the phrenic has its origin directly from the medulla spinalis. This is the more remarkable, because the phrenic, with the exception of its connexion with the cardiac nerves of the par vagum and sympathetic, is purely a muscular nerve, (going to the diaphragm). If we examine the sympathetic, we shall find that Soemmering has distinctly mentioned that it receives its roots, or connecting twigs, both from the posterior as also the anterior roots of the spinal nerves."

Professor Mayer has succeeded in tracing the supposed origin of the sympathetic into the spinal marrow itself, not only in animals, but also in the human subject, and has given a drawing of the direct and indirect connexion of the sympathetic with the spinal marrow by the anterior and posterior roots of the second lumbar nerve. Fig. 2 shows it in the human subject; and fig. 3 in the calf, to the description of which he refers. According to this, he shows that the sympathetic not only communicates by means of many twigs with the ganglion spinale of the spinal nerves, and thus, with their posterior roots, but that one, two, or even three insulated twigs of the sympathetic are distinctly continued with those of the anterior root into the spinal marrow.

"The nerves," says Professor M., "if I may so express myself, show a remarkable predilection for decussating or crossing. An arrangement of this kind I have observed in the cardiac nerves; the left branch passing to the right ventricle and pulmonary artery, the right to the left ventricle and aorta. This is not very distinct in the human subject; whereas, in animals it is much more so, and remarkably so in the horse."—"On the other hand, this arrangement of the nervous fibrillæ in the central parts of the nervous system,—viz. the brain and spinal marrow,—is only observed at one spot, viz. at the origin of the corpora pyramidalia. I have always been able to detect this decussation in the human subject, although of variable extent; whereas, in many mammalia, it does not exist at all; in others, again, it appears."

#### PROPERTIES OF ARTERIES LEADING TO INFLAMED PARTS.

Dr. ALISON, of Edinburgh, has been led by various experiments to lay down the position, that the vital power of tonic contraction in arteries, called by Parry and others tonicity, and the only vital power existing in the arterial coats, is found to be *diminished* in all vessels leading to an inflamed part, of a size admitting of actual measurement. Taking the observations of this nature in connexion with those made with the microscope on the minute vessels of inflamed parts themselves, it may, the professor thinks, be laid down as a general fact, that all the vessels concerned in any local inflammation are in a state of *relaxation* and *distention*, as compared with their natural condition,—and this at a time when they are pulsating apparently with unusual force. These vessels transmit, in consequence of their weakened condition, the impulse given by the heart with less modification than it receives

on passing through the arteries of sound parts: and themselves exerting a less power of contraction on the blood than they do in a sound state.

This being ascertained, the question immediately presents itself, whether this weakened state of the vessels is an adequate cause of all the changes as to the movement of the blood which takes place in the inflamed state; that is, whether inflammation consists simply in a weakened action of the vessels. I formerly, says Dr. Alison, mentioned one striking fact, on which, I think, there can be no doubt, as sufficient to indicate that this question must be answered in the negative, viz., that two distinct and nearly opposite changes are ascertained to take place in the movement of blood through an inflamed part,—a retarded movement in the vessels most immediately concerned, and an accelerated movement and greatly increased transmission in all surrounding vessels.

The supposition that inflammation consists only in an altered action of the vessels, does not explain the effusion of lymph in this morbid process, nor show the difference between this state and simple determination or congestion of blood where no unusual product issues from the vessels. The peculiar products of inflammation exuding from the vessels are evidence that the fibrin is both in much larger quantity and has a greater attraction of aggregation than in any effusions from uninflamed vessels.

Irritants capable of exciting inflammation do not in their first action on the vessels produce the state noticed above; they lessen the calibre of the vessel, and impede the transmission of blood through them.

The more that this subject is considered, the more distinctly, as I think, continues Dr. A., must it be perceived, that the only way to escape from these various difficulties is to suppose, that the causes which excite inflammation do so by really exciting or increasing a vital action, but not an action of the nature of contraction; that the idea of the vessels of inflamed parts taking on an increased action is a delusion; but what is truly excited is an action not of the vessels but within the vessels of the part affected; that it is an increased exertion of powers by which the blood is moved, or its motion influenced, in the capillaries, but which powers are inherent in the blood itself, dependent on, or influenced by, its relation to the surrounding textures, but independent of any contractions of living solids; and the increased exertion of which powers leads always to distension, and to more or less diminution of the tonic power of contraction, of the vessels, within which it takes place.

#### ON THE CAUSES OF THE MOTION OF THE BLOOD IN THE CAPILLARY VESSELS. By Dr. POISEUILLE.

The globules of the blood in the capillaries of the mammiferæ are found to possess different velocities even in the same vessel. Some of them have two simultaneous motions—one of rotation, the other of translation; while others remain motionless for a time. The velocity of the globules in the capillaries is less than in the arteries and veins; or seldom greater.

Numerous experiments made, 1st, upon the heads of the salamander and frog, animals in which the circulation is, as it were, suspended at pleasure, show that it is established gradually from the centre to the circumference; 2d, upon the foot of the frog, dividing the crural vessels; 3d, upon the mesentery of the frog and salamander, by cutting the heart; 4th, upon the mesentery of young rats and mice. All these experiments, of which several are confirmed by those of the two celebrated physiologists, Haller and Spallanzani, have convinced Dr. Poiseuille that the heart and elasticity of the arterial coats are the *sole agents* in the capillary circulation in question.

In resting upon the preceding facts, that is to say, the action of the heart and arteries, and the tendency which the latter have to collapse when they are not sufficiently dilated by the tide of blood projected from the heart, the constant *jerk*, *intermittent*, and *oscillatory* circulation, which precede the death of an animal, are easily explained; the cause of the *retrograde circulation* presented by the arteries after the death of the animal and that of the heart is similar.

Dr. P. has established, by a great number of experiments, that the calibre which the arteries and veins present, proceeds from the pressure of the liquid which they contain; that their coats are constantly distended by the blood which they receive;

that these vessels tend to collapse suddenly, in consequence of the elasticity of their coats, as soon as the cause of their dilatation is removed.

The large arteries and veins, as well as the small ones, possess this property; but, besides, the diameter of the last gradually diminishes when they cease to receive blood. This retraction is sometimes so great, that the mesenteric vessels of the frog, salamander, young rats and mice, are reduced to two-thirds of their original diameter. He has also ascertained that, *ceteris paribus*, this reaction is more decided in the arteries than in the veins. These facts being known, it is easy to determine the motions of the blood in parts which have been separated from the trunk either by ligature or by a cutting instrument—motions which even yet are designated by the title of circulation.

Having cleared up these points, the author passes on to the examination of the causes of the irregular motions of the globules which he has observed in the capillary vessels.

If we study the course of the blood in the arteries and veins of the frog, of very young rats and of young mice, we observe, in proceeding from the axis of the vessel to the coats, that the velocity of the globules is totally different. In the centre, their velocity is at a maximum; it diminishes gradually as we approach the coats. In the immediate neighbourhood of the coats, a very transparent space can be observed, which is generally occupied by serum; this space is equal to about the 1-8th or 1-10th of the diameter of the vessel. This transparent part of the vessels observed by Haller and Spallanzani as being occupied by serum, has been again noted by Blainville.

Since some of the globules, rubbing against each other, are projected into this transparent part of the vessels, the globules placed in the middle possess a very slow motion, and they cease to move when they are almost in contact with the coats of the vessel. The globules which are nearest to this transparent part have a double motion of rotation and translation; they roll, if the expression may be used, over this part of the serum.

From these observations, the author concludes that the interior of the vessels is lined with a layer of serum at rest. Since this layer is immoveable in its immediate contact with the coats of the vessels, every time that a globule is placed there it will be at rest, or rather, its velocity will be more or less diminished, according to the portion of the globule immersed in it. Now, in the capillaries the globules move between two layers of serum. Hence, their motion ought to be less rapid than in the large vessels, since they require to overcome the inertia of this layer.

If a globule is partly in the layer, this portion of the globule will be at rest, while its remainder, placed in the axis of the vessel, will acquire a certain velocity; then the globule will move round its own axis, in order to acquire its normal velocity in following the centre of the vessel. If of two globules, one is placed in advance of the other in the layer, the former will pursue its course, and the latter will be delayed, and the motions described will be presented.

The labours of M. Girard upon the flow of liquids in tubes of small diameter have established, in most tubes susceptible of being softened by the liquid moving in them, the existence of a similar layer. The author passed through tubes of very small diameter, liquids holding in suspension opaque bodies; and, having examined this current by microscope, he found this layer immoveable, and of a thickness much smaller than that obtained by the calculations of Girard.

Hence, the author concludes, that the blood transported by the vessel of the heart to all parts of the body does not impinge against the coats; that a layer of serum, by its state of rest, guards the coats from any such effects. Besides we can conceive the importance of this immoveable layer of serum lining the coats of the vessels in the act of nutrition, since the recent experiments of Müller of Berlin have demonstrated, that the fibrin is held in solution by the serum.

Dr. Poiseuille has farther studied the influence of cold and heat upon this layer of serum, and shows that the diminished velocity of the capillary circulation by cold and its greater rapidity by the action of cold, are naturally interpreted by the increase in the thickness of this layer in the first place, and its diminution in the second.

These results completely correspond with those of M. Girard on the variation in

the thickness of the layer which lines the coats of inert tubes, when temperature increases or diminishes.

We know that certain animals, such as fishes, and some amphibious mammalia, are sometimes immersed nearly 262½ feet (80 metres) beneath the surface of the water, and then support a pressure of from seven to eight atmospheres. It is important, therefore, to know how this layer acts, and at the same time to observe the modifications of the capillary circulation under such pressure. With this object in view, the author has constructed an apparatus, to which he has given the name of *Porte-objet pneumatique*.

From experiments made with this apparatus, he infers, that the thickness of the layer of serum, the existence of which is due to the affinity subsisting between the coats of the vessels and the serum, a thickness which varies so remarkably from heat and cold, is independent of surrounding pressure, that the contractions of the heart preserve their normal rhythm, whatever the pressure is.

How absurd, then, is the opinion of these philosophers who consider that, without atmospheric pressure, circulation cannot go on; but atmospheric pressure, combined with the motions of respiration, are accessory causes of the flow of the blood, as Dr. Poiseuille has shown in another memoir. ●

#### OBSERVATIONS AND EXPERIMENTS UPON THE FUNCTION OF THE CÆCUM. By Dr. SCHULTZ, Professor of Physiology in the University of Berlin.

The objects of the learned Professor in making his experiments were to ascertain: 1, the function of the cæcum: 2, the digestibility of the different articles of food: 3, the manner of the dissolution of the fleshy fibres in the stomach, according to microscopical observations: 4, the degree of acidity in the stomach and cæcum: 5, the degree of alkaliescence of the food in the stomachs of ruminating animals: 6, the nature of the acids in the stomach: 7, the coagulation of milk by the saliva, stomach, &c.: 8, the saliva: 9, the nature of the bile.

He maintains that there are two digestions, one in the stomach, the other in the cæcum, and that the latter is more especially active when vegetable food has been ingested. From the first experiment he learned that the degree of acidity in the cæcum is not always the same, that it is not always present, and that the food may even become alkaliescent. From the second, that this acidity was neutralized by long fasting, and thus allowed pure bile to enter the cæcum and neutralize its contents. From the third, that there is always bile in the course of the small intestines. From the fourth and fifth, that all the bile secreted by the liver during fasting, is by no means contained in the gall bladder, and that that part is very small compared with the large quantity that flows into the intestine during the empty state of the stomach. From the sixth, that though bile is always flowing, it never passes the cæcal valve during fasting, but collects on the upper side of it; it is only after perfect acidification, and at the beginning of the peristaltic motion of the intestines, that this bile flows into the cæcum. From the seventh, eighth and ninth, that the degree of acidity and alkaliescence of various parts of the digestive canal, vary with the length of time that has passed after feeding, and the degree of perfection of the gastric digestion, as also with the length of time which animals have fasted before feeding. From the tenth, that the quantity of digestible matter which is contained in the food has a great influence upon the degree of acidity in the cæcum. From the eleventh, that in carnivorous animals, when the cæcum and colon are but little developed, the food is for the most part digested by the stomach and small intestines, and the acidity in the cæcum is in general very weak, since the food, when it is here collected, contains little or no digestible matter.

The general results from the whole of the experiments we give in the author's own words; they are of the highest interest and importance.

"*Results of the experiments upon the cæcal digestion.*—It may, therefore, be gathered from my observations and experiments, that the food in the cæcum becomes not only a second time sour, but that the acid chyme is there neutralized by the access of bile, in the same way as in the duodenum; so that after the employing of the intestines very different reactions may be produced according to pleasure. On account of this twofold consumption of bile in the stomach and cæcum, there is an antagonism between the two digestions; for when the bile is consumed by the digestion in

the stomach, the cœcal digestion cannot be perfected, and, on the other hand, when the bile flows into the cœcum, the neutralization of the acidity in the duodenum cannot take place. In those animals in which the cœcal digestion is most perfectly developed, this antagonism appears to be so arranged, that each digestion has its particular period of action, so that when the one is in action, the other is either lessened or at rest. In ruminating animals, it is very evident that the gastric digestion takes place more particularly during the day, and the cœcal at night, so I think the gastric may very properly be called the diurnal, and the cœcal, nocturnal digestion.

"In carnivorous animals, however, the cœcum is so little developed, that the stomach alone furnishes nearly the whole process of digestion. These animals, therefore, have a preponderating diurnal digestion. This agrees with the fact, that carnivorous animals rest for the most part during the day, and at night become hungry, and seek their prey, and are, therefore, nocturnal animals, since their digestion takes place during the day.

"As the formation of the feces follows the perfected cœcal digestion, herbivorous animals are accustomed to discharge the greatest quantities in the morning and evening, and but very little during the day, and the healthy course of digestion. There appears to be something similar to this in man, in those ages where the cœcal digestion is most developed; in childhood, on the contrary, when the digestive apparatus resembles that of carnivorous animals, repeated discharges of excrement take place at indefinite periods of time.

"*The use of the valvula cœci in cœcal digestion.*—That the cœcal digestion may take place, it is necessary that the still digestible remains of the food should be rendered acid and changed into chyme, as in the stomach, before its mixture with the bile. This could not happen if the bile flowed continually into the cœcum, and it is therefore probable, that its opening into the small intestines is closed during chymification, as the stomach is closed during its digestion, only with the difference which the different state of the matter required. The stomach is closed during digestion at the pyloric orifice, to prevent the egress of the food, and the cœcum at its iliac opening, to prevent the ingress of the bile. This is my view of the use of the valvula cœci. I have not only found in general at the lower end of the *ilum*, an alkaline reaction, while the upper is still either sour or neutral, but at certain periods of digestion, a collection of pure bile at the iliac orifice of the cœcum. The contents of the cœcum are at this time nevertheless sour. This would be impossible if the mouth of the cœcum were not closed during chymification. After the collection of the food, therefore, in the cœcum, its opening like that of the bladder, uterus and stomach, appears to be strongly contracted by its muscular fibres, and with the help of the valvula cœci, to be perfectly closed. The contrary is the case at the beginning of the peristaltic motion of the cœcum, and upon the opening of its iliac orifice the collected bile flows in. This agrees with the sensation of the ceasing of the peristaltic motion after the collection of the food in the cœcum, which I observed upon myself, and have described in my work (*de Alimentorum Concoctione Experimenta Nova.*) It appears to me, therefore, that the generally admitted explanation of Fallopius, according to which, the use of the valvula cœci is to prevent the return of the food from the cœcum into the *ilum*, is quite unfounded; for it may be easily seen that during excretion this backward motion is very possible.

The hygienic deductions from the above, made by Dr. Schultz, will be given in our next Number.

## PATHOLOGY AND THERAPEUTICS.

### ON THE SOFTENING OF THE MUCOUS MEMBRANE OF THE INTES- TINAL CANAL IN CHILDREN. By Dr. DROSTE, of Osnaburg.

Dr. DROSTE coincides in opinion with Andral and others, that *ramollissement*, or softening, is an idiopathic disease which may primarily affect all the tissues of the body. The mucous membrane of the intestinal canal of children is peculiarly



liable to undergo this process at the commencement of the periods of weaning and teething. Romberg, out of fifty cases of this affection, found that

6 occurred from the 1st to the 3d month (inclusive).					
17	—	—	4th	—	6th
7	—	—	7th	—	11th
14	—	—	1st year to the 2d year.		
6	—	—	2d	—	5th

According to Dr. D., the first symptoms of the disease are frequent stools of a greenish, watery, mucous matter, mixed with yellow flakes, and of an acid nature. It is further accompanied by vomiting of acid matter, cough, impeded respiration, anxiety, perpetual restlessness, frequent crying out and moaning, coldness of the face and extremities, emaciation and debility, and, at last, by convulsions and comatose symptoms. Fever may be present at the commencement, but never lasts till the termination of the disease. The epigastric region is sometimes a little inflated, but never tense; it may be pressed without pain, and the skin is pale and relaxed.

The softening process, of which the above are the symptoms, may be divided into three stages. In the first, the mucous membrane preserves its texture, but loses its normal consistence. This may be the case with the whole of the membrane, or only with patches of it. In the second stage, it is converted into a thin, soft, gelatinous, nearly transparent, matter, which can be wiped away with a sponge, or dissolved by water poured upon it. In this stage, continuity is maintained by the subjacent membranes, though it will always be remarked that these, too, are softer than in a healthy subject. In the third stage, no trace of organization is left in any of the membranes; the intestines are perforated in different places to a greater or less extent, and the internal surface, which is sometimes of a dark red colour, presents here and there traces of extravasated blood.

Most of the modern German pathologists are of opinion, that the cause of this disease is an affection of the nerves which supply the coats of the intestinal canal. This position is principally founded on the celebrated experiments of Camerer,\* in which, after cutting, on both sides, the sympathetic and par vagum of a rabbit, he found the coats of the intestinal canal softened in precisely the same way as in the diseased human subject. Basing his views on this fact, Camerer concludes, that the cause of the disease under consideration is an inflammation of the above-mentioned nerves, terminating in paralysis. But Droste and the later writers, whilst they allow that the nerves are primarily affected, deny that they are inflamed. They content themselves with asserting that they are in an abnormal condition, which may be either of excitement or depression. They ask—and in vain—for the anatomical signs of inflammation. Moreover, the remedy for this disease, the efficacy of which they describe as remarkable, and as acknowledged throughout Germany, proves alone that the nature of the latter cannot be inflammatory. This remedy is the *muriate of iron*. Pommer relates two cases of its decided success. One of his patients was a child of six months old, to whom he gave two scruples of muriate of iron within a week; in a decoction of marshmallow. The other, a child of four weeks old took twenty-four grains in eight days. Both were allowed scarcely any nourishment, except a few tablespoonfuls of warm milk or gruel. Hergt gives, in these cases, musk in conjunction with iron. The day after the first exhibition of these remedies, sickness and diarrhoea had both disappeared. He prescribes also liniments for the epigastric region, and warm aromatic fomentations for the whole abdomen.—*Zeitschrift für die gesammte Medicin, &c. Hamburg.* 1 Band, Heft 4. 1836.—(*Brit. & For. Med. Rev.* Oct. 1836.)

#### CHRONIC LARYNGITIS. By Dr. Roots.

This paper appears in the fourth Number of St. Thomas's Hospital Reports. A case is first narrated, and then follow the clinical remarks.

Case. J. Hurley, a coal-porter, aged 26 years, was admitted on the 24th Dec.

\* See "Versuche über die Natur der krankhaften Magenerweichung, von Camerer. Stuttgart, 1828.

affected, for two months after exposure to cold, with severe cough, with thick yellow expectoration, succeeded by sore throat and hoarseness. The tonsils were swelled, and the arches of the palate had a livid appearance. Pressure on the thyroid cartilage occasioned pain. The voice is heard in a hoarse whisper—the skin is hot and tongue coated, pulse 96. Bled to sixteen ozs.—blister to the throat—calomel purge. Antimonial wine and sulphate of magnesia every six hours.

28th. Can speak louder—has less pain on pressure—cough diminished—skin moist. 29th. Twelve leeches to the throat—one grain of calomel, and a quarter of a grain of ant. tart. every four hours. Jan. 2d. Voice decidedly better; but there is still some pain on pressing the larynx. He continued to improve, and the mercury was discontinued on the 5th. On the 15th he was considered to be well, and was discharged on the 19th of January 1836.

*Clin. Rem.*—The symptoms of chronic laryngitis are commonly these:—"A hoarse, harsh cough, occasionally almost amounting to a sort of croupy, or crowing sound; the voice, too, at the same time changes: it becomes hoarse, rough, and harsh, and as the disease advances, it is often merely a hoarse harsh whisper: sometimes, indeed, it is quite sibilant, accompanied by a hissing sound; and there is also a hissing sound sometimes in respiration. The respiration is difficult and hurried. The expectoration most commonly is copious; sometimes it is only mucus, but as the disease goes on, it becomes muco-purulent, sometimes almost entirely purulent, and sometimes sanguineous, either streaked with blood, or there is occasionally expectoration, with small patches of blood. The pulse is most commonly quick; and when the disease is of long standing, it is often accompanied by great emaciation, and attended also by a considerable anxiety of countenance. Sometimes the case is attended by a very distressing perspiration. There is also commonly more or less pain in deglutition, and if you put your hand on the larynx, on directing the patient to make an effort to swallow his saliva, you notice, so far as my experience goes, that it is invariably productive of pain to a greater or less extent. I never remember to have witnessed a case of chronic laryngitis, in which this symptom was not present.

"From the character of the expectoration, the emaciation, the quick pulse, and the perspiration, you will see that chronic inflammation of the larynx often simulates very closely phthisis pulmonalis. How then would you form your diagnosis? It is of the utmost importance that the diagnosis should be correct, inasmuch as the one is a case which admits of being cured, and the other, according to our present knowledge, does not. In the first place, you would judge by the degree of resonance on percussion being natural over every part of the chest, and more especially under the clavicles upon either side, the apex of the lung being the part in which, generally, tuberculous deposition commences. In addition, then, to the resonance being natural, you would, through the medium of auscultation, form your diagnosis by the state of the respiratory murmur. If the respiratory murmur was heard naturally over the whole of the chest, then you would arrive at the conclusion that the disease was situated merely in the larynx. It is often complicated, however, with bronchitis, and then you still find a good resonance, no dulness on percussion at any particular spot; but you have, to a greater or less extent over the large, and perhaps some of the small bronchial tubes, mucous, sonorous or sibilous rattle. This again is a condition which admits of being cured; and, therefore, you would make up your mind, under such a condition, that there was inflammation of the mucous tissue of the larynx, accompanied by inflammation of the mucous membrane of the bronchi."

These excellent remarks are followed by others of a similar character, respecting tuberculous deposits in the lungs, hepatization, excavations, &c. Chronic inflammation of the larynx produces, sometimes only a congestion of the lining membrane—sometimes thickening—hardening—roughness—tuberculation—ulceration. The ulceration may take place about the rima glottidis, or even in the epiglottis—about the chordæ vocales, ventricles—the angle in front of the thyroid cartilage. Mere softening of the mucous membrane is a degeneration which Dr. R. has seldom seen.

The treatment of this complaint must be, to a certain extent, antiphlogistic. In many instances, it will be necessary to bleed once, twice, or even oftener, from the arm, besides frequent leechings. Counter-irritation, by leeches, antimony, or what Dr. R. prefers, croton oil, will be advantageous. Dr. R. warns the student against

too much reliance on counter-irritation. Leeches must be again and again applied, while there is pain on pressure of the larynx. Dr. R. prefers the croton oil to the tartar-emetic, especially in females and delicate subjects. The pustules after antimony sometimes run much farther than is intended, and sloughs form, which leave unseemly eschars on parts exposed to view, as the throat and nape of the neck.

In respect to internal medicines, he thinks the most efficacious is mercury, given in such moderate doses as to raise pyalism in the course of a few weeks, rather than in a few days. Nauseants are of some use, in conjunction with mercury, and the best is antimony. A narcotic is generally necessary, in combination with the mercury and antimony, to allay the irritation of coughing. Opium is best, if the constipation be not troublesome—if so, hyoscyamus.

Where there is reason to suspect thickening of the mucous membrane, iodine may be employed, with the mercury. The recommendation of mercury in this disease is on the presumption, that there is no strong tendency to struma in the constitution. In our prognosis, we should always bear in mind that, sometimes, a sudden spasm of the glottis snaps the thread of life in a moment.—*Med. Chir. Review*, October, 1836.

*Oil of Croton externally applied in Chronic Laryngitis.* By Dr. ROMBERG.—The following cases prove the peculiar efficacy of this species of counter-irritation in affections of the organs of voice; a fact observed by many.

CASE I. A fisherman, *æt.* 34, lost his voice after exerting himself greatly in saving some individuals from drowning. There was no reason to suspect any disorganization of the larynx. Blisters, vapour baths, &c. were tried without effect. Frictions of croton oil were directed over the larynx, to be repeated as soon as the eruption declined. On the twenty-first day of this treatment he began to recover his voice, and regained it completely.

CASE II. A girl, *æt.* 18, suffered during seven weeks with hoarseness, succeeded by aphonia, the consequence of a sudden chill. Leeches, emetics, and irritating frictions produced no relief; but, after the third application of croton oil, an eruption appeared, and she immediately regained her voice.

CASE III. A woman, *æt.* 38, complained for twelve months of a sensation of pressure in the pharynx, as if the neck were squeezed, rendering deglutition difficult: there were no other symptoms. Many remedies were tried without benefit. Three drops of croton oil were rubbed in, and, after the third application, an eruption appeared on the neck, nucha, chest, and face, which was followed by erysipelas. The patient entirely recovered.

Dr. Romberg never found that the external application of croton oil had a purgative effect, but he never applied it to the abdominal integuments.

Dr. Otto reports, in the same journal, the case of a woman affected with sciatica, for which frictions with croton oil were made on the thigh, and the whole body became red and covered with vesicles. Dr. Otto never observed its purgative effect when thus applied.—*Wochenschrift für die gesammte Heilkunde*. 1835.

#### ON DEFORMITIES OF THE CHEST. By Mr. COULSON.

This little brochure is not on the hacknied subject of spinal distortion, but on "lateral and anterior compression" of the thorax. In the former, the sternum is prominent, and the sides of the chest are flattened in. The individual is said to be chicken-breasted. It is now more than ten years since Dupuytren published a paper in the "*Repertoire de Anatomie*" on this distortion which, though sometimes congenital, is generally traceable to weakness of constitution, scrofula, low, damp and unhealthy habitations, bad cloathing and unwholesome food. This state must, of course, be unfavourable to the functions of circulation, respiration, &c. and it would be very desirable to counteract the deformity if possible. Dupuytren draws a distressing picture of the consequences of laterally flattened chest in hooping-cough—especially when enlarged tonsils accompany the deformity, as it usually does.

The other species of distortion is a flattening in of the sternum, or anterior depression. The external appearances are here the reverse of what they are in the other species. The sternum is hollow, and the sides are bulged out.

"The constitutional remedies for both deformities are the same. We must order

nutritious diet; regulate the digestive function; and perhaps employ, as Dr. Copland recommends, the artificial salt-water bath, with a very large proportion of salt, at a temperature suited to the peculiarities of the case (or preferably sea-bathing),—in short, we must make use of all those means by which the system can be duly kept up.

"I concur, however, with Dupuytren, in thinking that a strengthening regimen, and the use of tonics should be used with all the moderation required by the embarrassment of respiration and the disorder of the circulation, which might be increased, and even rendered dangerous, by a regimen and remedies of too tonic a nature, or given in too great a quantity.

"Whatever mode of treatment be adopted, there can be no doubt that a pure air is requisite to its success. My trust, however, is in other than constitutional remedies."

The remedy of Dupuytren is as follows:—

"Of all those which I have used," says Dupuytren, "I have found none more efficacious than exercises adapted to strengthen the muscles which extend from the arms and shoulders to the chest, and especially than frequent pressure upon the sternum from before backwards."

Mr. Coulson has used this remedy in lateral depression, or chicken-breast, with success; but he prefers voluntary exercise to passive pressure.

"The object and result of the exercises I recommend," says Dupuytren, "is to raise up the sides of the chest, to separate them, to make them turn outward, and finally to restore them to their natural conformation. There is no exercise better adapted for this purpose than that which obliges persons labouring under this malformation, to raise a weight suspended to a cord passed through two pulleys, by the aid of their arms and hands, during several hours daily. The end of the cord to be grasped should be fastened to the middle of a lever to be taken hold of by the two hands, the other extremity supporting a weight proportioned to the strength of the individual. The individual standing upright, or even rising on tiptoe, to reach the lever placed at the extremity of the cord, seizes it with both his hands; and employing the power of the muscles of the fore-arm, arm, neck and chest, to bend the head, chest and body downwards at the same time, must raise the weight at the other extremity of the cord, and alternately employ the flexor muscles to raise the weight, and the extensors to straighten the body. If it be true—and there is no doubt of it—that there exist between the bones and muscles relations of conformation and action, so that the latter always tend to act upon the former, in such a manner as to bring them to their first and fixed shape; it is certain that the exercise we have just described, will, by directing the efforts of the muscles upon the bones of the chest, gradually bring the sides of this cavity to an improved form."

"Perhaps the best mode of overcoming the depression by developing muscular action and power, similarly observes Dr. Copland, 'is to cause the child to raise weights, by means of ropes and pulleys placed a considerable height over his head; so that, by taking hold of the rope with both hands raised above the head, and pulling it downwards, the muscles may be brought into action, and the parietes of the chest thereby dilated.'

"Participating in these views, I observed in my former paper, that 'the child should stand erect, and carry the arms as far backwards as it can;' and, to the latter injunction, I still attach much importance. With a vague impression, however, that the exercise prescribed by Dupuytren was not the best devised, since in it the weight of the body and the contraction of the abdominal muscles must depress the ribs, I observed, that 'the use of the dumb-bells is a good exercise,' and added, that 'any exercise, indeed, is good, by which the scapulæ are approximated towards each other, and the arms carried backwards.'

"I am now satisfied that carrying the arms backward and approximating the scapulæ, without at the same time depressing the ribs by the weight of the body and the action of the abdominal muscles, is all that is requisite. I object, however, to the employment of dumb-bells for that purpose, on account of the jerk which they produce, the involuntary action (that is, beyond a certain extent) which that implies, and even the danger which it produces; and I deem the Indian Exercises, first described in this country by Donald Walker, in his 'Exercises for

Ladies,' as greatly preferable to all others, both in these and in every other deformity of the chest. They raise up the ribs and sternum, without the slightest counteracting tendency to depress them, and they give the fullest expansion to the chest.

By these various means, if properly persevered in, the chest returns to its natural shape, and the whole system becomes invigorated."

Some appropriate cases and plates illustrate this little volume, which we recommend to our surgical brethren. Mr. Coulson seems to have devoted much attention to the subject, and has handled it well.—*Med. Chir. Rev.*, Oct.

#### ON THE USE OF CHLORIDE OF SODA IN INTERMITTENT FEVERS.

By Dr. GOUZEE, First Physician of the Military Hospital at Antwerp.

DR. GOUZEE was induced to try this medicine, first recommended by Dr. Lalesque, as its cheapness would render it (if efficacious) very valuable to the poor inhabitants of marshy districts, as a substitute for quinine. The dose prescribed was half a drachm of chloride of soda in four ounces of distilled water, to be taken by spoonfuls between the fits, and so that the last doses should be swallowed shortly before the next paroxysm was expected. The patients were restricted to a light diet, and confined to their beds, or at least their chambers. Ten cases are reported of ague; in two the intermittent yielded immediately; two others were cured after a slight return; in one there were four attacks, gradually diminishing; in two cases the severity of the paroxysms abated, but it was thought necessary to have recourse to sulphate of quinine; in two others no effect was produced, and in one the disease was aggravated. Dr. G. thinks that these cases prove the febrifuge properties of the chloride of soda to be less marked than those of sulphate of quinine, and therefore that it should not be trusted to except in the slighter cases, and where the patients are readily susceptible of the effects of medicine, as women and children.—*Revue Médicale. Février, 1836.*

#### INCONTINENCE OF URINE.

M. MONDIERE has employed the extract of *nux vomica* in cases of nocturnal incontinence of urine, with very beneficial effects. The case in which its efficacy was most strongly shown is that of a young woman, aged twenty, who, from the age of six years, had constantly voided her urine involuntarily during the night. The use of twelve of the following pills put an end to the incontinence: they were continued until twenty-four grains of the extract had been taken, and, during the year following this treatment, there was no return of the disease. Other successful cases are mentioned.

Extracti nucis vomicæ, gr. viij.

Ferri protoxidi, gr. j. M. fiant pil. xxiv.

*Gazette Médicale. No. 10. 1836.*

We find in the October number of the Medical Chirurgical Review, under the head of *Enuresis*, the following, which, as akin to the above article, we insert here:—

A case of inability to retain the urine is related by Dr. Roots in the 4th number of St. Thomas's Hospital Reports. The patient was a young female, aged 16 years, who had recently menstruated for the first time. The enuresis had continued, more or less, for five years. She could only retain her water when sitting, and perfectly quiet. She had complete command over the rectum. She was ordered a dose of castor oil, and then to take 15 drops of the tinct. lyttæ every six hours. A blister to the sacrum. She had no involuntary discharge afterwards. The tinct. lyttæ, however, was increased to twenty minims every six hours for a few days. She was then discharged cured.

We believe the lyttæ to be the best remedy in such cases, and it may be taken to a very considerable extent. We have exhibited up to three or four drachms per diem, without any bad effects. A slight strangury is the signal for lessening the dose or discontinuing the medicine.

**ACUPUNCTURE IN RHEUMATISM.** By Dr. WM. MARBLEY LEE, of Indian Town, S. C.

In the third Number, or that for August, 1836, of the *Southern Medical and Surgical Journal*, Dr. Lee gives an account of five cases in which acupuncture was had recourse to for the relief of rheumatic patients.

In *acute Rheumatism*, the author thinks that the needle acts as an irritant, and is therefore improper before inflammatory action has been reduced. He cautions against allowing the common steel needles to remain in any length of time, owing to the pain and difficulty which attend the extraction of a needle, which was allowed in one of his cases to remain in two hours.

In *sub-acute Rheumatism*, Dr. Lee considers acupuncture to be a prompt and efficacious remedy.

"In *chronic Rheumatism*, acupuncture will relieve promptly and thoroughly, but the disease is liable to recur on the re-application of the cause usually producing it."

Dr. L. believes acupuncture to owe its efficacy to the transmission of the galvanic fluid. In recommendation of this remedy he tells us:—it is not painful; it is not inconvenient; it is prompt and effectual,—in, be it understood, appropriate cases.

Though strictly referrible to the head of MATERIA MEDICA, the two following articles are inserted in this place:—

**CINNABAR FUMIGATIONS IN VENEREAL ULCERS.**

DR. VENOT employs with success the following mode of fumigating venereal ulcers of the throat with cinnabar. After soaking sage-leaves in strong gum-water, the sulphuret of mercury is sprinkled over them, and they are dried in the sun; they are afterwards smoked in a pipe instead of tobacco, and the vapour is thus directly and conveniently applied to the diseased surface. Several cases are reported, to prove its efficacy.

*Journ. de Méd. Pratique de la Soc. Roy. de Bourdeaux. Février, 1836.*

**FORMULA FOR AN ARTIFICIAL CHALYBEATE WATER.**

R. Ferri Sulphatis, ʒss.  
Sacchar. albi, ʒiiss. Misce, et divide in chart. xʒ. æq.  
D. S. No. 1.

R. Sodæ Carbonatis, ʒss.  
Sacchar. albi, ʒiiss. M. et divide in pulv. xʒ. æq.  
D. S. No. 2.

One powder from each of these packets is to be dissolved in a small quantity of water, then mixed and drunk whilst effervescing. Each draught contains about a grain of the carbonate of the protoxide of iron, dissolved in water impregnated with carbonic acid gas, with a little Glauber's salt and carbonate of soda; the carbonate of soda being designedly a little in excess. This is a good substitute for ferruginous mineral waters, where the natural ones cannot be obtained.

*Summarium des Neuesten in der Heilkunde. 1835.*

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**SURGERY.**

SURGEONS do themselves and their profession great injustice and injury when they would affect to put Surgery in contrast with Medicine, by proclaiming the certainty of the former and the fallacies of the latter. A surgeon who is not in fact an operating physician, that is a person learned and experienced in medicine, with the superadded dexterity in performing operations, is a mere mechanic, in whom we can only confide so far as his hands are directed by the superior intelli-

gence of another, who takes cognizance of cause and effect, and who shall determine the necessity of an operation and its probable consequences. Even were a comparison instituted on the score of prognosis between the diseases in which the knife and other instrumental and mechanical means have been used, and those in which hygienic and medicinal remedies have been resorted to, there would we believe be very little cause to boast of the nearer approach of the former to certainty than of the latter. The subject is not fairly presented, when it is alleged by the mere surgeon, that he can remove pain, and at times save life, in cases in which medicine is powerless. The converse of the proposition may be advanced as true in a still larger number of instances, without, however, the fact being specially creditable to medicine. The next question is, can a surgeon, by means purely surgical, procure the healing of wounds, the union of fractured bones, reduction of dislocated ones, and the removal of cataract, in a large number of cases, without deformity or collateral injury; and can he promise, in advance, that morbid growths shall be cut away, aneurisms removed, and limbs amputated, without the constitution of the patient being seriously affected, and in many cases his life destroyed.

A want of confidence in their resources seems to be implied in the numerous successive, and we might say almost continual, changes, which surgeons make in their apparatus and instruments, used in operations. Something is doubtless due, here, to the vagaries of the human mind, those will-o'-the-wisp chaces, which men so often prefer to the strait road and certain termination of their journey. But after making all due allowance for this ever-present and inevitable cause, we shall still be constrained to see a proof of uncertainty in surgical processes in the frequent suggestions, inventions, and modifications of instruments with which we are favoured.

In this country, there is less fear to be entertained of a separation, we should rather call it dislocation, of surgery from medicine, than in Europe, where the education is in a measure different if not distinct for the two, as are the customary honours conferred on successful candidates for their practice.

One great inconvenience resulting from a love of novelty and excessive eagerness to alter or invent, is a forgetfulness by the party of the important fact, that it is not the instrument but the man which is the best security for a successful operation. The time, also, which is given to cutlery and mechanics, is a serious abstraction from the true philosophy of surgery, or a study of morbid changes of structure and the extent of and time in which they are completed, and their effects, in the first place; and a wide and careful view of all the agencies by which these are modified, retarded, or prevented in the second place.

#### ON THE CURE OF ERECTILE TUMOURS. (*Aneurism by Anastomosis.*)

PROFESSOR LALLEMAND of Montpellier has practised with success a simple operation for the removal of this troublesome class of tumours. It consists in introducing into the lower part of the tumour several small fine pins parallel to one another, and covering the space which separated them with numerous circumvolutions of waxed thread. Three days afterwards he made a similar application to the upper part, and attacked successively the whole circumference, leaving the pins for about seven or eight days, or even more, until they had produced sufficient inflammation. This occupied about forty days, and he was about to attack the centre, when he found it of a violet colour, tumid, and very hot; the general health was disturbed, and he suspended all treatment. To his surprise, the central part suppurated and collapsed, and in a fortnight was completely changed into a flat cicatrix. As some points of the circumference had escaped inflammation, it was necessary to repeat the intro-

duction of the pins. After two months and a half of treatment, during which 120 pins were introduced, the whole was converted into a pale fibrous tissue: not a teaspoonful of blood was lost, and the health of a delicate child was only slightly deranged for a few days.

We have ourselves succeeded completely in removing erectile tumours of a small size, by inducing ulcerative inflammation of the part. The agent which we have used was the *tartar emetic* sprinkled on a pitch plaster, of the size of the tumour, and left on it until ulceration takes place. Sometimes, from the plaster not adhering, we have had recourse to tartar emetic ointment rubbed twice a day over the part. By this means we have been saved the necessity of recourse to an operation for the removal of these tumours by the knife,—alarming to the mother and friends, and terrifying and painful to the little being itself.

#### CURE OF GANGLIONS OF LONG STANDING, BY PUNCTURE AND COMPRESSION.

M. CHAILLY has communicated to the Medical Society of Paris two cases in which he has succeeded in curing very troublesome ganglions, by puncture and compression. This operation it is true, has been already repeatedly tried without success; but Mr. C. thinks that this want of success is owing to the selection of an improper place for the puncture. Hitherto they have been punctured at their summit, and as pressure was necessary to effect the adhesion of their parietes, the opening was necessarily closed and the fluid formed anew could not flow off. This inconvenience M. C. has avoided he says, by making the incision at the side of the tumour; the compression then favours the flow of the fluid, and the adhesion of the parietes of the cyst is speedily effected.—*Journal de Méd. et de Chirurg. Pratiques*, April, 1836.

We can bear testimony, from personal experience, to the efficacy and mildness of the operation as above recommended. The manner in which it is noticed above might seem to imply novelty on the part of Dr. Chailly. A reference to Cooper's First Lines on Surgery, Chapter on *Ganglions*, will show that this mode of operating was practised by Dr. Currie. We have found a common sewing needle of some length answer the purpose very well.

#### ON THE TREATMENT OF WHITE SWELLINGS. By M. LISFRANC.

A white swelling is defined by M. Lisfranc to be a chronic enlargement of a joint. He does not attempt, as Sir B. Brodie has done, to classify diseases of articulations according to the tissue which is primarily affected. Even when the extreme mobility of the joint proves that the ligaments are destroyed, or when on bending the joint, a grating sound is heard as if two surfaces rubbed together, he does not consider amputation indispensable. The most dangerous white swelling is a tumour which gives on pressure the sensation of a spongy tissue, never acquires a very considerable size, and does not always give pain. It is formed (as is ascertained by dissection,) of a reddish substance, like erectile tissue, in which there are granulations analogous to pulmonary tubercles. Suppuration soon takes place in this disease, and sanious pus with portions of the erectile tissue escapes. If amputation is not consented to, M. Lisfranc applies moxas, to endeavor to destroy the abnormal tissue by inflammation.

*Treatment of White Swellings.*—If there is any visceral disease, either preceding the local affection or coming on during the cure, M. Lisfranc directs his attention to it, and does not attempt to cure the disease of the joint; for in such cases he has found that a diminution of the local affection was followed by an aggravation of the visceral disease, and that the cure of the latter relieved the former malady. Absolute rest of the limb is necessary, in the position which will be most convenient, should ankylosis take place. In hip disease, M. L. fixes the leg to prevent luxation. As regards treatment, it is important to ascertain whether the *stage* is acute



or chronic: not that there is acute inflammation of the joint, but rather the state in which there is increased heat of skin, and permanent or remittent pain, which may be called sub-inflammation. In this stage local bleeding is beneficial, regard being had to the strength of the patient and to the effect of depletion upon the constitution: thus, in scrofulous and debilitated subjects, from twelve to fifteen leeches should be applied, and, if the patient is strong, from forty to fifty. In general the blood should be allowed to flow for two hours. If the pain and heat continue, twenty more should be applied the next day, or the day after that. If great debility is produced, poultices and tepid baths are had recourse to, or narcotic applications, if the pain is increased. When the powers are invigorated, leeches should be re-applied until the tumour goes into the complete chronic stage. This may be after six weeks, or even after as many months. The return of the subacute symptoms requires leeches. M. Lisfranc has employed calomel and opium so as to produce rapid salivation, but not with much success: in the chronic stage he has not been more fortunate, but he intends to make more experiments with this medicine. When the chronic stage is fully established, and has at least existed eight or ten days, M. Lisfranc employs excitants. He considers that a few leeches determine a flow of blood to the part, and he therefore applies from four to ten, and allows them to bleed half or three-quarters of an hour. In some cases there is a diminution of the tumour the next day: it may, however, be increased in size, but this is generally temporary. If after six or eight days there is no improvement, the leeches must be repeated; but if, after two or three applications, the symptoms do not yield, other means must be used. If there is any diminution, from five to ten leeches should be applied every eight or ten days.

Indiscriminate compression is bad; but, when the tumour is soft and œdematous, it may succeed. If there is any probability of its reproducing the inflammation, a simple roller should be first applied: subsequently, stronger compression should be made by means of cones of agaric, two inches in height, with their bases resting on the tumour, and the mass passing at least half an inch beyond the swelling in its whole circumference. These are to be fixed with a roller. This compression should be continued for three months after the tumour is apparently cured, gradually diminishing the pressure. Kneading the joint previously to compression is useful in obstinate cases.

The actual cautery is remarkably beneficial when the tumour is so chronic that no pain is produced on walking. Hydriodate of potash, rubbed in externally, is the form of iodine which M. Lisfranc likes, and he only employs it in very chronic cases. Douche baths of all sorts, blisters, moxas, and setons, are sometimes useful: their effects must be carefully watched. After the patient is cured, exercise should be taken very cautiously and gradually.—*Revue Médicale, Avril et Mai, 1835.*

*On the Employment of Muriate of Barytes in the Treatment of White Swellings.* By M. LISFRANC. The "Gazette Médicale" reports a clinical lecture of M. Lisfranc's, in which he relates the results of his experiments with this medicine, which has been long known, but has been recently brought into notice by M. Pirondi, of Marseilles.

Six grains of muriate of barytes are dissolved in four ounces of distilled water, of which one spoonful is taken every hour, except one hour before and two hours after each meal. In order to tolerate the medicine, the patient must abstain from wine and meat, taking only water and vegetable food. The bottle should not be exposed to the sun, or the salt will be precipitated, and the last spoonfuls contain a greater quantity: to avoid this, it should always be shaken. Sometimes the medicine produces slight pain in the stomach or a feeling of weight; but, if other symptoms do not follow, the stomach gradually becomes accustomed to the remedy, and the pain ceases. If, on the other hand, nausea, vomiting, or even some slight symptoms of poisoning come on, the medicine should be suspended, and cautiously resumed. The climate has some influence; for, although at Marseilles two drachms have been given M. Lisfranc has never been able to increase the dose in Paris beyond forty-eight grains, and often he has been unable to reach that. The unpleasant symptoms have been removed by whites of eggs. Numerous patients have been submitted to this treatment, and the following are the conclusions which M. Lisfranc has arrived at.

1. Generally the white swelling has been much amended, and sometimes cured. 2. The benefit has been greatest amongst the scrofulous. 3. In some very few cases the muriate alone has cured. 4. After a certain time, the disease having become stationary, it was necessary to employ another method. At a later period, the renewed use of the muriate has produced excellent effects. 5. It may be employed both in the acute and chronic stage of white swellings. 6. Serious accidents have never resulted from its use; the slight symptoms before mentioned have always yielded readily. 7. A frequent effect is a diminution in the frequency of the pulse; this falling from sixty or eighty to forty or fifty, or even to twenty-five. 8. In some circumstances the medicine, continued at the dose of twelve grains during the month, has produced as much amendment as in other cases where the dose has been gradually augmented. 9. Where the patients have been slightly inconvenienced with the medicine, it has been most useful. 10. Compression and local abstractions of blood have been often combined with this treatment, and with extreme advantage.

M. Lisfranc considers muriate of barytes, given according to M. Pirondi's method, as a truly valuable acquisition to surgery, ("une vraie conquête chirurgicale.")

*Brit. & For. Med. Rev., Oct. 1836.*

## OBSTETRICS.

### STATISTICS OF LABOUR.

16,434 women were confined at the Dublin Lying-in Hospital, during the seven years of Dr. Collins's mastership. These gave birth to 16,654 children; of which, 1,121 were still-born; and of these, 293 were premature.

240 cases of *twins* occurred; and, of the 480 children thus born, 422 were born alive; of these, 245 were males.

*Triplets* occurred four times: in two cases it was the patient's second, and the two others her third pregnancy.

The mean of the patients' ages was 29½. All the children were born alive: one case was premature; eight are stated to have died.

The *face* presented in thirty-three cases; four children were still-born.

The *breech* presented in 242: of these, seventy-three children were still born, forty-two putrid, and forty of the 242 premature.

The *feet* presented 137 times, (not including twins;) sixty-two were still-born, forty-one putrid, and thirty-six premature.

In forty cases the *shoulder or arm* presented; thirty-three children were turned; of which, twenty were born alive, six were putrid. In three of the thirty-three, the head required to be lessened.

Eleven cases of *placenta prævia* occurred; in eight of which, the child presented naturally, four were turned, one was expelled by the natural efforts, one was delivered by the forceps; in two the head was lessened; two presented with the feet, and one with the breech; six were born alive, two were putrid. Two of the women in whom the children were turned, died.

*Hæmorrhage after the expulsion of the placenta* took place in forty-three instances: viz. twenty cases of it during the first fifteen minutes, two in twenty minutes, one in thirty minutes, two in forty-five minutes, five during the first hour, two in one hour and a half, three in two hours, two in three hours, one in four hours, one in six hours, and one in twelve hours. In one case it took place on the fourth day, one on the fifth, and one on the tenth day. Four of these patients died: one from rupture of the uterus, one from sloughing of the vagina, and two from hæmorrhage.

*Retention of the placenta* occurred in sixty-six cases: in thirty-seven it was from want of uterine action, in nineteen from spasmodic or irregular action, in ten the placenta was adherent; four were twin cases; in twenty-four there was slight hæmorrhage; and in four the delivery had been "forced." Six of the sixty-six

women died: viz. four of puerperal fever, which was then prevalent; one of inflammation of the uterus; and one, a feeble woman, sunk on the eighth day after delivery. In each of these six, the placenta was retained by irregular action of the uterus.

*Convulsions* appeared in thirty patients, of whom twenty-nine were primiparæ; the other patient was in her second pregnancy, and had suffered from a similar attack before. Fourteen of the thirty-two children (two cases of twins,) were born alive. In eighteen women the convulsions subsided after delivery; in ten they occurred both before and after; and in two the attack did not appear till after delivery. Fifteen were delivered by the natural efforts, six by the forceps, eight by perforation; in one case the feet presented. Five women died.

*Rupture of the uterus or vagina* took place in thirty-four instances: in thirteen posteriorly, in twelve anteriorly, in two laterally; in one the os uteri was torn; and in six the precise situation of the injury was not mentioned. In nine cases of the thirty-four, the peritoneum was not torn; in one, there were numerous lacerations of the peritoneum, without the substance of the uterus being torn. Two women recovered. The following scale shows the proportion of cases occurring in first, second, &c. labours.

No. of Pregnancy,	1	2	3	4	5	6	8	9	10	11
No of Women,	7	6	6	2	2	5	1	1	2	2

The funis prolapsed in ninety-seven cases, in twenty-four of which the child was born alive. Twelve of the ninety-seven occurred in twin cases; seven of the twelve with the second child; nine where the feet presented, two where the breech, four where the shoulder or arm, and seven where the hand presented with the head. Seven children were putrid, and three premature.

One hundred and sixty-four women died, (one in one hundred.) In giving a scale of the deaths occurring in first, &c. pregnancies, the great proportion of deaths met with in first cases will at once strike the reader. "We should carefully bear in mind," says Dr. Collins, "that, of the 16,434 women, 4,969 gave birth to first children, which is nearly a *third* of the entire; therefore, any relative proportions should be made with reference to this fact."

No. of Pregnancy,	1	2	3	4	5	6	7	8	9	10	11	13
No. of Women,	86	20	11	11	9	7	2	6	2	3	2	1

The following table shows the causes of death in the above cases:

Diarrhœa	-	-	-	1	Sloughing of vagina	-	-	-	6
Typhus fever	-	-	-	5	Pericarditis	-	-	-	1
Rupture of the uterus or vagina	-	-	32	Peritoneal inflammation (placenta re-					
Uterine hemorrhage	-	-	11	tained)	-	-	-	-	4
Puerperal fever	-	-	59	Abcesses in spinal canal	-	-	-	-	1
Inflammation of the brain	-	-	3	Lumbar abcess	-	-	-	-	1
Ulceration of the intestines	-	-	3	Phthisis	-	-	-	-	2
Hectic fever	-	-	1	Diffuse cellular inflammation	-	-	-	-	1
Grief, apparently	-	-	2	Abcess in abdomen	-	-	-	-	2
Stricture of intestine	-	-	1	Acute bronchitis	-	-	-	-	1
Effects of tedious and difficult labour	-	-	11	Anomalous disease	-	-	-	-	12
Convulsions	-	-	2						

Eighty-eight women were attacked with *puerperal fever*. In thirty-two cases it appeared on the first day; in twenty-nine, on the second; in eight on the third; in two, on the fourth; and, in one case, on the eighth day. The mortality is stated above.

Of the 16,654 children which were born, 1,121 were still-born, 527 were putrid; 293 of the 1,121 were premature: 460 of the 1,121 were first children. For further particulars of children dying in the hospital, we must give the author's statement in his own words:

"The total number of children born was 16,654: of these, 284 died previous to the mother leaving the hospital. This is nearly in proportion of one in 58½, which

must be considered a moderate mortality under any circumstances: however, when it is considered that this includes not only *all the deaths that occurred in children born prematurely, and in twins, but also every instance where the heart even acted, or where respiration ceased in a few seconds after birth*, the proportion of deaths becomes trifling indeed."

Thirty-two of the children who died were twins, and, of these, seventeen were premature.—*Collins*.

#### PRESENCE OR ABSENCE OF PREGNANCY.

We give the observations of the late Dr. Gooch, in his own somewhat peculiar style, as follows, on the subject:—

There are three classes of persons by whom you are likely to be consulted, namely, young unmarried women, who will solemnly assert that they are not pregnant, yet have big bellies, &c.; women with ovarian dropsy; and unmarried women, who think they are pregnant, when they are not. I will give you a little advice relative to the unmarried class. Never give an opinion till six months have elapsed since the last menstruation. Do not believe one word they say. Listen to them as you would to a jockey praising his horse. A medical man requested me to accompany him a few miles in the country to see a young lady in fashionable life, who had a peculiar tumefaction of the abdomen, and milk in her breasts, to which he did not attach any importance. When we arrived, he said he had brought an accoucheur, a friend of his. I was permitted to examine her as I pleased. I laid my hand, which is naturally cold, on the abdomen, and felt the child move; the navel was raised, and the belly hard. This was enough to satisfy me; but as it was expected that I should do every thing that was customary, I introduced my finger into the vagina, found the *cervix uteri* obliterated, and a hard tumour resting on the *symphysis pubis*, and on pushing it upwards, I felt the child drop again on my finger. I went down stairs, and told the medical man she was with child. He was astonished. In six weeks after I delivered her of a child. I have met with many similar cases. Never rely upon the evidence of their tongues, but on that of their bellies.

The counterpart of this is the following.

A young man and woman fell in love with each other, and although their parents objected, they contrived to get married unknown to them; they returned respectively to their homes, and lived with their parents to keep all quiet, but used to meet now and then. At length the female became sick in the morning, her abdomen tumid, so much so that her sisters remarked what a large belly she had; the young married female, taking it for granted that she was pregnant, as she had full breasts, morning sickness, and a cessation of her menses, confessed her marriage, and a house was taken in which she lived with her husband. At about seven months from the commencement of her symptoms I was consulted; when, on feeling her abdomen and finding it soft, I expressed a doubt as to the nature of her case. I then examined *per vaginam*, and discovered the *cervix uteri* as long as in the unimpregnated state, and upon this evidence asserted that she was not pregnant. I put her under a plan of treatment, consisting of purgative medicine every morning, so as to procure four or five evacuations daily, together with tonics. After this plan had been followed ten days, the purgatives were given only every second day: under this treatment she became perfectly well.—Pp. 103—105.

#### UTERINE HEMORRHAGE AFTER DELIVERY.

From the same good authority as above we obtain the following hints and experience:—

There are, says Gooch, many cases in which flooding begins immediately after the birth of the child. I was requested by a lady, who was accustomed to have profuse flooding immediately after the birth of the child, to attend her at

her next confinement. The membranes were ruptured before I arrived; her face was much flushed; her pulse full and rapid. What was the cause of this disturbed state of the circulation? Did it proceed from the apprehension of danger, or was it from her having taken three glasses of wine daily after dinner, and a pint of porter at supper, fearing she should want strength during her labour? Be this as it may, she fell into labour with a disturbed state of the circulation; and the child was born soon after my arrival. I secured the navel string, and gave the child to the nurse; but, being prepared for hemorrhage, I determined not to interfere with the placenta until it was separated. With one hand I used friction on the abdomen; and with the other under the clothes felt if there was any hemorrhage. In five minutes, she said there was a quantity of something coming away, and gush came the blood from the vagina. I passed up my finger, and found the placenta separated and forced a little way into the vagina; and by a gentle extension of the cord I extracted it, when the hemorrhage immediately ceased. I now thought all flooding was over, but it soon began again; her pulse sunk, and she fainted. A short time before this case occurred, Mr. Rigby, in a conversation with me on this subject, had expressed a favourable opinion of plugging the vagina with cloths dipped in vinegar, as recommended by Le Roux, remarking, that the lives of many had been saved by it; but I feared, as the uterus is large at this time, that blood would still flow into it, the escape of which being prevented by the plugging of the vagina, the case would merely be converted into one of internal hemorrhage. However, I determined to give this mode of treatment a trial in the present instance; and therefore called for large pieces of linen, which, being first dipped in vinegar, I pushed one by one up the vagina, almost into the uterus. The hemorrhage seemed to cease; the patient recovered from her syncope; and I again thought all danger was over. She had afterwards a few trifling pains: the belly began to swell, and again she fainted; but gradually so far recovered as to express a wish to see her husband and children before she died; and I expected she would have died: her mouth was drawn on one side, and she became convulsed. I would have given any thing for a consultation, but in these cases there is no time for it; the life of the patient depends on the man who is on the spot: he must stand to his gun, and trust to his own resources. A practitioner who is not fully competent to undertake the management of these cases of hemorrhage, can never conscientiously cross the threshold of a lying-in room. I immediately pulled away the plugs from the vagina, and introduced my hand into the uterus, through a quantity of half-coagulated blood up to the fundus, where, inclining towards the front of the uterus, I felt something ragged projecting from the surface: to this part I applied my fist, and made counter-pressure with my hand externally. The hemorrhage ceased, and no more blood came away. In two or three minutes the uterus began to contract, and I found my hand pushed gradually lower and lower, until expelled by the complete contraction of the uterus. I then withdrew my hand from the vagina, and the hemorrhage did not recur. A few minutes elapsed when she opened her eyes, and asked if all danger was over. I replied she was much better, and directed her to remain quiet. The effect of the stimulus of my hand, or of its pressure against the parietes of the uterus, was instantaneous; and in three days she was so much recovered that she appeared to suffer nothing from the loss of blood. The best method then at once of making pressure on the bleeding vessels, and of exciting the contraction of the uterus, is, to introduce the hand into the uterus, and applying the fist firmly to that portion of its surface over which the placenta was attached, make on the outside a counter-resistance with the other hand: this is much more effectual than friction on the abdomen, or tickling the uterus internally with your finger."—*Gooch*, Pp. 163—167.

#### POSITION OF THE HEAD DURING EXPULSION.

"As the force of the *uterus* continues to act upon the head, the round and bulky vertex and tuberosity of one parietal bone are directed against the inclined plane formed by one of the spines of the *ischia*, and by it guided forwards towards the neighbouring *acetabulum*, while the less bulky but smooth forehead is, by the same motion, passed backwards towards the *sacro-iliac synchondrosis* of its own side.

In this situation the head is expelled, the case being in fact converted into one of the first position. This I believe is the usual course. Professor Naegele of Heidelberg observed it to occur in ninety-three out of ninety-six cases."—*Maunsel's Manual of Midwifery*.

#### CASE OF TWINS; THE SECOND CHILD BORN FOUR DAYS AFTER THE FIRST.

A young woman gave birth on the 1st of April to a female child, which was weakly, but seemed to have attained its mature growth. The placenta was expelled soon afterwards, and the patient was quite comfortable, although every now and then she felt motions, as of another child in utero. (It is not stated that the medical attendant examined the abdomen with his hand after the delivery, as he ought on all occasions to do, to ascertain the state of the uterus.) On the fourth of April, this woman was again seized with sharp labour pains, which, after lasting for several hours, expelled a vigorous healthy child. The after-birth followed in the course of a short time.

It is not certainly easy to account for the unusual delay which occurred in the present case. It deserves to be noticed, that previous to the first delivery a hæmorrhage had occurred. Now it seems probable that one only of the placenta had become partially detached at the time, and that this partial separation brought on the expulsion of one fœtus a short time before the full period of gestation had been completed. That the second child might remain in utero longer, was not improbable, seeing that it had an independent placenta, which seems to have been quite unconnected with the other one. The learned reporter alludes to the possibility of the children being the products of two different conceptions; but influenced by the statement of the woman herself that she had indulged in connexion only once, he rejects the idea of superfœtation. It appears, however, that the father was very unwilling to claim the paternity of both children, and endeavoured to escape the expence of maintaining two, on the ground that he had cohabited but once with the woman.—*Wildberg's Jahrbuch der Staatsarzneikunde*.

#### BELLADONNA EMPLOYED IN SPASMODIC CONTRACTION AND RIGIDITY OF THE UTERUS.

M. CARRÉ of Briançon gives the following cases in which belladonna was used to relax the uterus:—

**CASE I.** A lady was in labour of her third child; the waters had broke, and, as no progress was gained, the midwife attempted to dilate the os uteri by her fingers. This proceeding increased the irritation and contraction, and produced general convulsions. M. Carré, being called in, bled the patient and used the warm bath, but to no purpose. He then ordered the os tincæ to be rubbed with belladonna ointment every half-hour; and, after the third friction, the uterus became sufficiently dilated to permit the operation of turning, and the child was delivered, and lived. The ointment was made by rubbing up eight grammes of Ext. Belladonnæ with sixty-four grammes of cerate, and of this from two to four grammes were used each time.

**CASE II.** A woman, æt. twenty-one, was prematurely taken in labour at the eighth month. The waters had broken for some time, and, when M. C. was called, he found the os uteri so strongly contracted upon an arm of the fœtus, that he could not introduce his hand. Having first had recourse to bleeding, &c., the same ointment was applied, and, after the fourth friction, the dilatation was sufficient to permit the operation of turning, and the extraction of a dead child.

DR. ANTONY, (*South. Med. and Surg. Jour.* 150—1.) bears testimony to the efficacy of Belladonna in the following language:—

"Some cases of rigid, iron-like hardness of the os uteri had, in my early practice, greatly perplexed and called loudly on me for some means for its relaxation. At length about 18 years ago, when labouring under such a perplexity, I reflected on the power of Belladonna in dilating the pupil of the eye for cataract operations, and

determined on the propriety of resorting to it for my present necessity. Considering it an article of much power, my next difficulty was to determine on the manner of its application. On searching for some preparation which might answer the demand, I finally adopted that of Chaussier's ointment, which I prepared and applied to the os uteri by means of a vaginal syringe, truncated near the round end. I filled the end to the extent of about one inch with ointment, and after introducing it to contact with the os uteri, whilst my patient was laying on her back, forced the ointment out of the syringe into the most depending part of the vagina, where the os uteri rested. The syringe was then withdrawn, and the ointment more particularly applied with the fingers to the whole of the os uteri. After two hours the opposing rigidity was found to be yielding, and the case progressed without farther difficulty. Several cases have since occurred in which I have used it with similar success. In only one, was the second application needed. I have no fears in its free application in that way, after the liberal use made of it in those cases in which I have witnessed its safety and efficacy."

"For many years I have been in the habit of recommending freely its use to my private pupils, and for several years past in my public instructions, under the name of Dilating Pomade; not only for the relaxation of the os uteri in cases of a fixed hardness thereof, but also for promoting its *more prompt* relaxation in those cases of labour in which general convulsions are repeated at every period for pain; also in those cases of that rigidity of the os uteri which retards the progress of the first stage of labour, and which is the most common, troublesome resistance in the first stage. But it has not fallen to my lot to have an opportunity, when it was at command, for using it in these convulsions; nor have I yet been informed of its success or use in such cases. I think it worthy at least of trial."

The publication of ARMSTRONG'S work will be concluded in the next number of the Library. Our readers will then, we doubt not, fully join us in the favourable opinion which we expressed, at the outset, of the merits of this work—so abundant is it in information, various in its contents, and lucid and terse in style. It will be followed by *Observations on the Principal Medical Institutions and Practice of France, Italy and Germany; with Notices of the Universities and Cases from Hospital Practice. To which is added an Appendix on Animal Magnetism and Homœopathy.* By EDWIN LEE, Member of the Royal College of Surgeons, &c. This work will come within the limits of the next number of the Library. An account of continental modes of practice follows appropriately the full view of English practice given in Dr. Armstrong's Lectures. It is thus that we propose ministering to the instruction and pleasure of our readers, by giving them a seasonable variety; and in due time going the round of the circle of medical science. We have our eye on some excellent works, both on Surgery and Midwifery, not generally accessible to them; some of which we shall select for republication.

We have received a copy of a *Manual of the Diseases of the Eye*, by Dr. Littell, one of the Surgeons of the Wills' Hospital for the Blind and Lame, &c. A rapid view of its contents satisfies us of its general merits, and of our being able to commend it in a suitable manner in the next number of the Eclectic.

Works transmitted by their authors or publishers to the care of Haswell & Barrington, or of Desilver, Thomas & Co., for the Editor of the Eclectic Journal of Medicine, will be regularly noticed, either in the form of analytical review or of summary of their contents.

# THE ECLECTIC JOURNAL OF MEDICINE.

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THE subject of the following article is one of never-ceasing interest to the physician; and in the light in which it is here viewed becomes doubly interesting, both in its pathological and therapeutical bearings. We are indebted to the Edinburgh Medical and Surgical Journal for this exposition of the views of Drs. Osborne and Bright on *Diseased Kidney* and *Dropsy*, which have elicited notices so generally from the English Medical Reviewers, and which are calculated, we will venture to say, to enlighten a large number of their medical brethren on the nature and amended treatment of forms of disease always embarrassing and so often fatal. It is our intention to introduce into nearly every number of the Eclectic an analytical review or digest of some approved work on the pathology and treatment of a disease,—a work which probably will be accessible to but a very small portion of our readers. In this way, without neglecting novelty, we shall make our Journal contribute to the same good end with the Library, viz. enlarged and accurate views of all the departments of medicine.

## ON DISEASED KIDNEY AND THE PATHOLOGY AND TREATMENT OF DROPSY.\*

We have been occupied in communicating to our English readers the results of the researches of a diligent and able foreign physician on the pathology and treat-

\* 1. *Annals of Sir Patrick Dun's Hospital, No. 1, for the year ending January 1831, with Medical Report presented to the Governors.* By JONATHAN OSBORNE, M. D. Physician in Ordinary. Dublin, 1831. 12mo, pp. 71.

2. *On Dropsies connected with Suppressed Perspiration and Coagulable Urine.* By JONATHAN OSBORNE, M. D., President of the King and Queen's College of Physicians in Ireland, Physician to Sir Patrick Dun's Hospital, &c. London, 1835. 12mo, pp. 64.

3. *Cases and Observations illustrative of Renal Disease, accompanied with the Secretion of Albuminous Urine.* By Dr. BRIGHT. Guy's Hospital Reports, No. 2, April 1836. Edited by G. H. BARLOW, M. A., &c. and JAMES P. BASINGTON, M. A., &c. London. Pp. 339—400.

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ment of dropsy. It is now our duty to make known, not only to our countrymen, but to our foreign brethren, the labours of an Irish and an English physician on the same subject. The latter part of our duty is, on the present occasion, the more indispensably requisite, because the facts contained in the work of M. Schroeder van der Kolk afford clear evidence, that notwithstanding our endeavours to make known the doctrines taught on this disease by British physicians, our friends on the Continent are in a state of singular and not very creditable ignorance upon the subject.

The researches of English physicians must be allowed to have indisputably established the three following points. *First*, Dropsical diseases are not always the result either of debility of the absorbents or obstruction to the motion of the blood in the vessels. *Secondly*, They are often the effect of inflammation, which has been either inactively treated, or has been allowed to become chronic,—or of vascular congestion in one or more organs, which has not been removed by the use of adequate and appropriate remedies; and in this class of dropsies the medicines called diuretics are of no avail, until the congestion or inflammation has been removed by the lancet, which, in these circumstances, is the best diuretic. *Thirdly*, Dropsical diseases may also be the result, not only of diseased liver or spleen, but also of disease of the kidney, either congestive, inflammatory, tubercular, cirrhotic, or otherwise affecting the secreting and cortical part.

Among those who have contributed to confirm, to illustrate, and to rectify these principles, the author of the two first tracts holds a highly respectable place. Though the previous researches of Parry and Wells, of Blackhall and Crampton, and of Dr. Bright, Dr. Christison, and Dr. Gregory, necessarily deprived him of the merit of originality, his observations nevertheless are highly useful in furnishing facts, both pathological and therapeutic, which deserve the serious attention of every conscientious practitioner.

Without particularly dwelling on the Report of the cases treated at Sir Patrick Dun's Hospital, the information concerning which may be given at another time and place, we shall confine our present attention to that part which relates to the nature, causes, and treatment of dropsical diseases.

Dropsy, observes Dr. Osborne, is an event which depends on a great variety of causes. It is indeed one of the symptomatic effects of several different diseases. In the reports in 1831 he had distinguished the dropsical cases treated at Sir Patrick Dun's Hospital into four orders; 1<sup>st</sup>, As they originated in debility; 2<sup>d</sup>, As they depended on impeded circulation; 3<sup>d</sup>, As they were the result of disease of the kidneys; and 4<sup>th</sup>, As they were the direct consequence of inflammatory action in the serous or cellular textures.

1. With regard to the cases referable to the head of debility, after alluding to the usual one of pulmonary consumption, the occasional occurrence of the disease in those enfeebled from an attack of fever, and its presence in the aged generally, he admits that it is rare, and the cases which occurred in the hospital as purely symptomatic, he refers to their just heads.

The great objection, indeed, which in our estimation may be urged against this as a properly admitted cause of dropsical effusion is the fact, that it must always be doubtful whether any given dropsical infiltration really depends on debility, or rather, whether it be not referable to some of the other heads,—such, for instance, as impeded circulation. It is manifest to any one who is acquainted with the physiological constitution of the human body, that not only the very existence of dropsy in the course of consumption, but the whole of the dropsical effusions taking place in the numerous tribe of organic diseases, depend more or less completely, sometimes altogether, on impeded circulation. Thus what is ossification and arctation of the semilunar and mitral valves but impeded circulation? What is aneurism of the aorta or *innominata* but impeded circulation? In what light is hypertrophy either eccentric or concentric to be viewed, unless as an effect and index of impeded circulation, and as itself a cause of impeded circulation. What is an indurated and hepatized lung or an enlarged liver but a cause of impeded circulation; and even chronic *bronchitis*, though partly operating on the pulmonic serous membrane and cellular tissue, may be regarded as in part an important cause of impeded circulation through these organs.

With regard to the dropsical effusions taking place in old age, and which have been so generally both by patients and physicians attributed to the comprehensive

and convenient abstraction, debility, these we have personally observed so often to depend upon disease of the heart, induration of the lungs, or some analogous change in one or more of the internal glands, as the liver or kidneys, that we doubt whether it be possible to produce in an aged person a single instance of dropsical infiltration which could be traced to the unaided and unmixed influence of debility, properly so named.

For the reasons now mentioned, it may be justly doubted whether mere debility, as a cause of dropsical infiltration, is not one of very rare occurrence, and whether, if our observation were more accurate, and our knowledge of the preliminary circumstances of dropsical diseases more extensive, they might not either be reduced to an infinitely small proportion compared with the other causes, or whether they might not be eventually excluded altogether from the etiology of the disease.

II. To the second head, that namely of impeded circulation, Dr. Osborne refers dropsy supervening on *pneumonia*, and *anasarca* with *ascites* supervening on *bronchitis* and indurated liver; and in illustration of the influence of these causes on the production of dropsical symptoms, he details the leading circumstances of three cases.

In the first case, which illustrates well the effects of pneumo-bronchitis in inducing not only general anasarous infiltration, but meningeal effusion, a woman, aged 60, was admitted on the 3d of March 1830, not only with œdema of the face and lower extremities, cough, with copious semiviscid expectoration, and crepitation at the base of the left lung, and signs of general *bronchitis*, but with stupor and noise in the head, and unusual drowsiness. The pulse was 70, and the disease had been of three months' duration.

Detraction of twelve ounces of blood from the temporal artery was followed by disappearance of the stupor and sound in the head; and under the use of a general blood-letting from the arm, with pills of squill, calomel, and foxglove, three times daily, the pneumonic symptoms and the dropsical swellings speedily and almost simultaneously subsided.

In a second case, in which a drunken pensioner of 59, who had distinct hard swelling in the right hypochondriac region, and cough coming on at the same time, i. e. about eight months previous to admission; and in whom œdema of the feet, *ascites* and hydrocele, with scanty uncoagulable urine, were associated with universal sonorous *rhonchus*, defective respiration at the base of the left lung, *dyspnoea*, produced by lying on the right side, blood was drawn from the arm to the amount of ten ounces, a blister was applied over the *sternum*, and afterwards beneath the clavicles; leeches were applied over the region of the liver, and a blister was placed on the left side, with the use of calomel and squill, and acetate of potass to act on the kidneys; the vapour bath to act on the skin, and gum-ammoniac in pill and mixture to act on the bronchial mucous membrane. Under the use of these means, the hardness and swelling in the site of the liver had become palpably diminished, but with little effect on the urinary secretion, and the symptoms of bronchial inflammation remained also unabated. The symptoms of this malady, indeed underwent a most serious aggravation on the 18th of August, about four weeks after admission, in the sudden appearance of difficult breathing, palpitation, with very weak pulse, livescence of the lips, and coldness and lividity of the extremities. For these a large blister was applied over the *sternum*, the feet were immersed in hot water, calomel and squill, with lactucarium were ordered, with draughts consisting of Hoffman's *seddyne* liquor, acetous solution of opium, aromatic hartshorn, and camphor mixture. Under these remedies the urgent symptoms of oppressed breathing were alleviated, and the urinary secretion was increased; but the bronchial disease remained little changed, until a succession of blisters had been applied, after which the cough, difficult breathing, and *rhonchus* diminished, and at the same time the urinary secretion increased, and the swellings receded; and about one month after the patient went out free from complaint.

It is a strong proof of the efficacy of this mode of treatment, that the patient had subsequently, from exposure to cold, and returning to his habits of intemperance, a fresh attack of the bronchial disease with its consequence, the dropsical swellings; and being re-admitted on the 8th November, and subjected to the same method of treatment, he a second time recovered and left the hospital free from complaint.

A third case, in which *anasarca* and *ascites* had supervened upon chronic bronchial

inflammation, and in which the treatment was conducted on the same principles, and with the same success, is so similar that it is unnecessary to enter into its details.

We think it of great importance to direct the attention of practitioners to the principles now stated; because we know from what we have personally witnessed, that they are not only pathologically correct, but they furnish the only rational means of curing a considerable proportion of cases of dropsy, upon which treatment by means of mere diuretics alone, either makes no impression whatever, or one which is prejudicial. Nay, we might further add, that in several cases of this description diuretics are so superfluous, that the moment that the inflammatory symptoms have been subdued by appropriate depletion, the urine begins to increase in quantity, and the dropsical swellings rapidly subside. Several instances quite similar to those now reported by Dr. Osborne, we could adduce as presenting the same kind of symptoms, and treated perhaps with a still more exclusive employment of mere antiphlogistic means.

Thus a woman of 56, named Elizabeth Aberdeen, was admitted with general anasarca swelling, and much *œdema* of the legs and feet, rapid panting respiration, preventing rest in the horizontal posture, cough, pulse at from 96 to 104, scanty urine and dry skin. Stethoscopic examination showed the sonorous *rhonchus* and sibilous wheeze generally diffused over both lungs, inaudibility of vesicular respiration in the lower and central parts of both lungs, with dullness upon percussion, and strong bronchial respiration towards the spine, a preternaturally clear beat of the heart diffused over both sides of the chest, with palpitation, and small, sharp, arterial pulse.

On the night of admission, after some purgative medicine, 18 ounces of blood were drawn from the arm, and the antimonial solution was directed to be given. Next day the respiration was much easier, admitting of the horizontal posture, the palpitation less violent, and the pulse softer and fuller. The respiration was still, however, accompanied with the sonorous *rhonchus* and the sibilous wheeze, though less intense, and less generally diffused. The swelling of the face was decidedly diminished, and that of the feet was less tense, and the amount of the urinary secretion was slightly increased. As the bowels had been opened, the antimonial mixture was continued, and another dose of purgative medicine was ordered at bed-time. Next day, when the bowels had been freely moved, as the symptoms were much the same, about eight ounces more blood were drawn from the arm, and a *linctus* to alleviate the cough, with an opiate at bed-time, was ordered. The following day the urine amounted to five pounds, the swellings were entirely gone, and the cough and difficult breathing were no longer a source of complaint. The use of powders of carbonate of soda, supertartrate of potass, and nitrate of potass, with an occasional cathartic, completed the recovery.

It is also important to observe, that the cases here reported by Dr. Osborne bear a close resemblance in symptoms to those reported by Dr. Schroeder, and have the advantage, we may be allowed to say without offence to the latter author, in presenting a more energetic and simpler form of treatment, and one which was calculated, we conceive, to remove the dropsical swellings in a shorter time, and with greater rapidity. From both, and from some further facts which shall appear in the course of this article, we would deduce the practical conclusion, that the skilful and rational practitioner will never, in a case of dropsy, prescribe for the mere symptom of scanty urine, but, after inquiring carefully into the state of the different organs, and their respective functions, take such a view of the disease as may lead him to discover on what these symptoms depend, and select and arrange his therapeutic measures in such a manner as may operate on the primary cause of the dropsical swellings, whatever that be.

But it further appears, that not only may inflammatory affections, such as *bronchitis* and *pneumonia* be the cause of dropsical infiltrations, but they may concur with the third cause specified by the author, namely, disease of the kidney, in complicating the disorder, and thereby rendering renal disease more efficient in the production of the effect. It will be seen, for example, that among 36 cases of dropsy from diseased kidney, which came under the notice of Dr. Osborne, during the spring and summer of 1833, eighteen laboured under *bronchitis*, in different degrees of intensity; eleven had gastro-enteric inflammation, denoted by thirst, vomiting, or diarrhœa; and in six instances, these two diseases were combined in

the same individuals. It thus appears, as remarked by Dr. Osborne, that nearly two-thirds of the entire number laboured under inflammation of the mucous membranes; and in such cases it may become a most just subject of inquiry, to what extent these inflammatory affections concurred in producing the dropsical effusion; whether they were not adequate alone to do so, while the renal disease was a secondary circumstance; and whether they were secondary agents, and merely aided the effects of the renal disease.

III. The third cause of dropsical effusion recognized by Dr. Osborne is disease of the kidney.

Upon this subject Dr. Osborne has made observations which, though not altogether original, are still so important, as to merit the serious attention of the medical practitioner. In giving an idea of his services in this respect, it will be requisite to embody at the same time the illustrations furnished by the recent researches of Dr. Bright.

1. In the first place, Dr. Osborne follows Dr. Bright in representing this disease to be distinguished by an albuminous secretion from the kidneys, and this secretion to depend on a morbid change in the structure of the kidney, consisting in the deposition of a grayish granulated substance, resembling portions of fibrine of the blood, first appearing in the cortical or external secreting part, but subsequently extending into the tubular or excreting portion of the gland. He states that, in every case in which he had an opportunity of examining the kidneys of patients secreting albumen, he found this peculiar structure; and he has since ascertained, that this grayish granular mass does not admit the matter of injection. When an injection is thrown into the artery, even in the most successful manner, it will not penetrate the gray deposit, which is chiefly seated in the cortical, but may sometimes fill up the tubular part so much, that the latter is limited to small insulated portions. In these cases the *tubuli* increase in density, and become more confined together, the nearer they approach their termination in the mammillated processes. In some of the most acute cases, he found the lining membrane of the *pelvis* and upper portions of the ureters in a state of the highest vascularity, resembling in appearance crimson velvet. The changes produced in the size of the organ vary. In recent cases, the kidneys are enlarged beyond the natural standard. In long confirmed cases, they are diminished in size, and become proportionally hard;—the cortical structure appearing to be removed, and the gray deposit substituted in its place.

A very good illustrative coloured view of the usual appearance of the kidney in this disease, Dr. Osborne gives in an engraving, prefixed to the second publication. It corresponds in all respects with the most exquisite cases delineated by Dr. Bright, and with several of those which we have ourselves witnessed.

The urine in this variety of renal disease is always more or less coagulable, so that it contains variable proportions of matter coagulable by heat, and similar reagents, and is at the same time of diminished density. The latter fact and its connexions with the presence of albuminous matter, was completely established by the experiments of Dr. Christison, and our late colleague Dr. James Crawford Gregory, with such uniformity that the low density,—that is density varying from 1015 to 1005, or 1007, may be regarded as a proof of the presence of albumen.

The conclusion regarding the coagulability is strongly confirmed by Dr. Osborne; and he enters into a pretty decided, if not elaborate defence, of this part of the doctrine against several individuals, who have thought themselves entitled to question its accuracy. He had remarked in his first report, that the urine, though albuminous in this disease, is sometimes, indeed in the majority of instances, not strictly albuminous; and that, though coagulable by heat, it differs in not coagulating with the muriate of mercury (bichloride.) P. 53.

In his subsequent publication, though he admits like others the temporary appearance of albumen in the urine from various causes which derange digestion, he maintains very decidedly the constant connexion of coagulable urine with disease of the kidney, and that the secretion never permanently contains albumen, where these glands are not diseased.

The objections which have been urged against the doctrine, that coagulable urine depends upon disease of the kidney, he refers to three heads. The first is, that coagulable urine has occurred in adults who appeared to enjoy good health, and

also in children. The second is, that in some persons it can be produced by taking pastry or other indigestible articles of diet. And the third is, that Dr. Darwell adduces an instance of a woman who died in consequence of diseased heart, and in whose lungs were scattered tubercles, in whom the kidneys were found in the first stage of the disease described by Dr. Bright, yet whose urine did not undergo coagulation.

To the first Dr. Osborne very properly replies, that, though albuminous urine is found in persons in the apparent enjoyment of health, yet attentive examination of the functions of such persons, shows that their health is not perfect. It has further been allowed, both by Dr. Gregory and the present author, that slight degrees of coagulation, cognizable by the bichloride of mercury, but not by the application of high temperature, may exist in persons enjoying apparent good health.

A more decided answer to this objection, however, is found in the whole phenomena of the disease as disclosed by Dr. Gregory and Dr. Bright, and as witnessed every day in practice. It is a well established fact, that though the urine continues coagulable, persons may either not fall into the dropsical symptoms, or may recover from them, and continue for some years well. We have seen and heard instances of persons who have continued well for years, yet in whose kidneys this change was perceived to have taken place to a very great extent, and in a very marked manner; and Dr. Bright mentions, in his present article in the Reports of Guy's Hospital, several very impressive cases of this description. But what is the kind of health enjoyed by these persons? Are they not exactly similar to a person reposing on the brink of a deep gulf? An error in diet, or exposure to cold, or an attack of acute disorder, however slight, is liable in them to induce some inflammation of the brain or its membranes, of the *pleura*, *pericardium*, or *peritoneum*, or some effusion into the brain, which terminates life in a few days, or it may be in a few hours, without the slightest appearance of mitigation from the most judicious and appropriate treatment. These terminations of this disease we have now seen happen so often, that we can consider no person safe, however favourable be the external signs of health in whom the urine is coagulable. On this point most conclusive evidence is furnished by Dr. Bright, in the present article, in several of the cases adduced. But perhaps a correct view of the subject may be formed from perusal of the following observations.

"Do we always find such lesion of the kidney, as to bear us out in the belief, that the peculiar condition of the urine to which I have already referred, shows that the disease, call it what we may, is connected necessarily and essentially with the derangement of that organ? After ten years attentive,—though perhaps, I must not say completely impartial observation—I am ready to answer this question in the affirmative; and yet I confess, that I have occasionally met with anomalies which have been somewhat difficult to explain.

"I have certainly seen one or two cases, and have read statements of one or two more, in which the condition of the kidney would have led me to expect albuminous urine, but in which it had not been found to exist. In all these cases, however, the observations on the character of the urine, have been made only a few days or weeks before death, at the close of a protracted illness; or the disease of the kidney has been complicated with other very extensive disease. A case occurred under my care in the clinical ward this winter, where a man died with *ascites* and a complication of most extensive disease of the liver and *peritoneum*, with moderately advanced granulation of the kidney; yet it was only by the most careful examination that any traces of albumen could be detected in his urine: and this leads me to observe, that the secretion is apt to undergo changes, even after the structural disease is established; which renders it requisite that we should not be content with examining the urine on one or two occasions, if we have any reason to suspect the existence of this disease.

"In the first place, it is quite certain, that if, from any cause, the urine becomes alkaline, the application of heat generally fails to produce coagulation; and in the next place, there has appeared to me to be an occasional alternation in the secreting power of the kidney, so that a large quantity of the lithates, or of crystallized lithic sand is deposited, and the albuminous matter is not thrown off. I have this winter had a case of this kind likewise under my care, in a man whose symptoms bear all the characters of renal disease, complicated with the disease of other

viscera. His urine for several weeks was found to be distinctly albuminous: it then became loaded with the lithates, and now throws down abundant crystals of lithic sand, and no longer affords any trace of albumen: and mentioning this case to Dr. Addison, I was told, that very lately the converse of this had shown itself in a case to which he had been called. All the symptoms led him to suspect this peculiar form of renal disease; but the urine did not coagulate, and was loaded with lithates. After a short time the lithates disappeared, and now the albumen is very decidedly perceived in the urine.

"That such facts as these tend, in some degree, to render the presence of albumen in the urine, or its absence, a less unerring test, cannot be doubted; but these anomalies are so few as to interfere very little with the general fact. There is no doubt likewise, that the morbid condition of the kidneys, connected with this disease, varies in different cases, to such a degree as to lead to the belief, that the action from which the change has resulted must at least be modified by circumstances and constitutions. The kidney is sometimes simply contracted and hardened; sometimes loaded with an adventitious deposit; sometimes apparently degenerated throughout its whole texture; sometimes affected both with deposit, degeneration, and contraction; all probably the result of chronic excess of action. It is to be expected that modifications should arise in the degree and constancy of the morbid secretion under such varieties of diseased appearance: but this is not as yet satisfactorily known; and I have certainly not always found the quantity of albumen increased in proportion to the apparent advance of the structural disease." P. 341—343.

The latter observation is rather at variance with what is subsequently stated by Dr. Osborne.

To the second objection it is justly answered by Dr. Osborne, that the temporary, casual or transitory appearance of albumen in the urine is very different, indeed, from the constant, habitual, and permanent presence of that principle in the secreted fluid. A temporary effect may arise from a temporary cause; but when that effect becomes permanent, it must imply that some more important change has taken place. Dr. Bright has remarked, that the secretion is liable to variations; and it appears from all the observations made in the Royal Infirmary of this city, that the urine undergoes undulations, or oscillations from a great variety of causes. Within the last six weeks, in the instance of a young lady, in whom the urine became albuminous after a severe attack of scarlet fever, and its albuminous state was accompanied with great dryness of the skin, and œdematous swelling of the face, three several times did the urine fail to give coagulable matter, on the usual temperature being applied, and consequently led to the conclusion that the disease was subsiding. The albumen, however, always reappeared, and was present in some proportion, two weeks ago, when the patient went to the country for the benefit of good air.

To the third objection Dr. Osborne very properly replies, that no argument derived from the first stage of the disease can have any weight. That stage it is not easy to distinguish from the natural stage; and if in the confirmed and more advanced stage of the disorder, the urine and the proportion of its ingredients be liable to undulation, and also to sources of fallacy, it is quite manifest that, in a degree infinitely greater, ought we to expect the occurrence of these undulations, and fallacies in the early stage of the disorder.

Upon the whole, we cannot perceive that these objections carry much weight. They are chiefly of a negative nature; and it must be sufficient to establish the fact, that when the urine is permanently and habitually albuminous, the change is connected with some change in the structure of the cortical or secreting portion of the kidneys.

The subsequent observations of Dr. Osborne are strongly corroborative of the doctrines taught by Dr. Bright on this point.

During five of the eight years for which he has been attached to Sir Patrick Dun's Hospital, thirty-six cases of coagulable urine have come under his observation; and in nine of these which were examined after death, the disease in the cortical part of the kidneys had taken place to a greater or less degree and extent; and the residual cases which did not terminate fatally, proved, as far as proof can be obtained, he contends, by similarity of symptoms, of cause, of collateral circum-

stances, and the effects of the *juvantia* and *ledentia*, that the kidneys must have been effected in the same manner. Conversely, Dr. Osborne has met with numerous cases of dropsy connected with diseased liver, impediments of circulation or respiration, or general debility, which terminated fatally, in which the urine was examined during life, and found not to coagulate, and in which also the kidneys were found to be free from disease. In short, Dr. Osborne states, that for the three years previous to January 1834, during which he has sought every opportunity of inspecting the kidneys of every individual whose urine has been examined during life, in no instance did he meet with coagulable urine without diseased kidneys, or healthy kidneys without coagulable urine. The following may be given as a brief summary of the result of his remarks.

"Though I have anxiously sought for evidence, either adverse or favourable to the opinion, that albuminous urine, when continuously secreted, ought to be considered as a symptom of disease of the kidneys, I have not met with a single instance of urine coagulating in a constant manner, in which an opportunity of examination after death was afforded, that did not present the disease of the kidneys; nor, on the other hand, an instance of the disease being found in the kidney after death, on which in taking a specimen of the urine in the bladder, it did not coagulate. On a review of the notes of all the fatal cases, I am also enabled to state, that the extent of the disease discovered after death, has been, in every instance, in proportion to the degree of coagulation. Thus, when the urine only frothed on the application of heat, the kidneys, though gorged with blood, contained the gray granulated structure exclusively in the outer portions of the cortical substance, and especially at the extremities of the gland; while in cases of complete coagulation, the entire cortical substance was filled, or rather superseded by the deposition now mentioned, and the *tubuli* were both compressed, and rendered indistinct. In some of the cases which have last occurred, I have also to mention, that the emulgent veins were filled with a substance resembling the buffy coat of the blood, but of a curdy texture."—P. 22.

We shall have occasion very shortly to direct the attention of our readers to the lesions found in the various organs of those cut off by this disease, as established by a very extensive table given by Dr. Bright. But in the meantime, we must observe, that though it may be unreasonable to expect the accurate correspondence between the degree of albuminous impregnation, and the extent of disease in the kidney here specified by Dr. Osborne, the fact of their close proportionate relation is, if always established, extremely important.

9. It is, *secondly*, a most important fact in the history of this malady, that the disease of the kidneys, though the essential and characteristic circumstance, is not the sole or exclusive morbid change. The history of the cases in which it occurs, and the common modes of termination show clearly, that the change in the cortical part of the kidney never proceeds to a great extent, or exists long, without being accompanied with various morbid changes in other organs,—some of short duration and acute character, others more chronic and tedious. It was observed first by Dr. Bright, and afterwards by Dr. James C. Gregory, that though dropsical effusion is a very common effect of this disease, it is not the only one. The latter observer, for instance, remarked, that of 45 cases in which inspection was obtained, in 35 the lungs, heart and liver, or intestines were diseased to a greater or less degree; that in 10 of 11 cases in which the head was inspected, more or less serous effusion was found on the surface, or within the ventricles of the brain; and that in 20 of 45, death had taken place without dropsical effusion.\* The same physician remarked, that symptoms of an affection of the lungs, or of the heart presented themselves in a degree more or less marked in 20 out of 35 cases; that vomiting and diarrhoea indicative of gastro-enteric irritation took place sooner or later in 46 of 80 cases; and that pain of the lumbar region, more or less severe and urgent, occurred in 33 of 80 cases.†

These results are very pointedly confirmed by the researches of Dr. Bright, given in the paper now under consideration. Thus he gives, in the *first* place, the details of ten cases in which the urine was albuminous during life, and in which this albu-

\* Medical and Surgical Journal, Vol. xxxvi. p. 361.

† Medical and Surgical Journal, Vol. xxxvii. p. 79.

minous impregnation was connected with diseased kidney; but which presented, besides, the following symptoms during life and morbid changes after death. The first case, after four years' duration, terminated in apoplectic symptoms, preceded by *hemiplegia*. No inspection. The second case, in which the symptoms of the disease existed eight years at least, and followed an attack of scarlet fever, terminated fatally by convulsions and coma; and after death, besides the mottled granulated state of the kidneys, there was found blood effused between the *dura mater*, and *pia mater*, hypertrophy of the heart, and old adhesions of the *peritonæum*. The third case, after four years' duration, terminated in mortal convulsions. No inspection. The fourth case terminated also, after three years, in mortal convulsion; and upon inspection the membranes of the brain were found diseased, the ventricles were distended with fluid, and the heart was hypertrophied. In the fifth case, in which death was also produced by convulsion and *coma*, the appearances in the brain were only those indicative of meningeal apoplexy. In the sixth case, after four or five years of albuminous urine, the disease suddenly terminated fatally by convulsion with apoplexy, and dissection showed similar traces of meningeal apoplexy, with some injection of the convoluted surface of the brain, and hemorrhagic injection of the right lung. In the seventh case, in which anasarcaous infiltration was combined with albuminous urine, death took place most suddenly; and the brain was found very vascular. In the eighth, death was accompanied by decided cerebral symptoms; but examination was not obtained. In the ninth and tenth cases, the immediate cause of death was peritoneal inflammation.

These cases show the usual mode in which the fatal event takes place. And it is to be remarked, that though in this disorder death takes place in this sudden manner, with symptoms of effusion within the brain, it does not always happen that the appearances found after death are in any degree proportionate to the intensity of the symptoms during life, according to the usual doctrines of pathology. A very slight effusion, such as is found in cases in which no convulsions have taken place, and no marked apoplectic symptoms have preceded the fatal event, is in many instances the only appreciable lesion. The truth is, that the fatal termination is the result of a species of poisoning by the circulation of urea with the blood through all the organs, and especially in the brain.

This, however, is only one mode in which death takes place in this malady; and though it is undoubtedly the most frequent, it is not the only one. The deleterious influence of the disease is aided by the morbid state in which several different organs are found, and the degree in which these organs are respectively diseased. To show the relative proportion of the different modes of death, and the relative degree in which the different organs are diseased, Dr. Bright has digested into the tabular form the principal circumstances, semiographic and pathological, of one hundred cases in which the state of the organs after death was carefully inspected. Thirty-three of these were already published, and he has now added sixty-seven more. From this table the following general conclusions are deduced.

"The principal lesions display themselves in the circulating and respiratory systems, and in the serous membranes. The heart and the lungs, the pleura, the arachnoid and the peritoneum, have, in a large majority of cases, shown marks of disease; while the liver, the spleen, the pancreas, and even the intestines, have frequently been, to all appearance, in a state of health, and have comparatively seldom given proof, by their structure, of any peculiarly diseased action. Of all the membranes, the pleura has decidedly been most often diseased; but that disease has, in forty cases, consisted of old adhesion; which, though it might have been connected with the first attack of renal disease, or might have taken place at some later period, in connexion with that affection, may probably only mark the liability of the individual to be affected by atmospheric changes, and may have been the result of some casual inflammatory attack. At all events, the twenty-six cases in which the pleura was apparently healthy, and in three of which its freedom from disease is distinctly stated, prove, that, however general a limited inflammatory action of the pleura may have been, it forms no essential part of the disease. That the pleura is, however, liable to inflammatory action, in a large proportion of these cases, may be inferred from the sixteen instances of recent inflammation; while the serous effusion, which has occurred in forty-one cases, has been connected with that general loss of balance between the actions of the exhalents and the absorbents which is obvious in every part of the system.



"The same tendency to disease which is manifest in the pleura, shows itself, though in a less degree, in other serous membranes. In the pericardium, we have found six instances of old adhesion, eight of recent inflammation, and twenty-three of serous accumulation; and in the peritoneum, ten instances of old adhesion, twelve or thirteen of well marked, recent, and often most acute inflammatory action; and twenty-three of the effusion of clear serum, in three of which a false membrane had been formed by chronic action, and again, looking to the arachnoid, we find that membrane rendered opaque, probably by a more or less severe inflammatory action, in thirteen cases; while well-marked serous accumulation had taken place beneath it in twenty-nine cases, and had partially distended the ventricles in six.

"The deviations from health in the heart are well worthy of observation; they have been so frequent, as to show a most important and intimate connexion with the disease of which we are treating; while at the same time there have been twenty-seven cases in which no disease could be detected; and six others, which, from not having been noted, lead to the belief that no important deviation from the normal state existed. The obvious structural changes in the heart have consisted chiefly of hypertrophy with or without valvular disease; and what is most striking, out of fifty-two cases of hypertrophy, no valvular disease whatsoever could be detected in thirty-four, but in eleven of these thirty-four, more or less disease existed in the coats of the aorta; still, however, leaving twenty-two without any probable organic cause for the marked hypertrophy generally affecting the left ventricle. This naturally leads us to look for some less local cause for the unusual efforts to which the heart has been impelled; and the two most ready solutions appear to be, either that the altered quality of the blood affords irregular and unwonted stimulus, to the organ immediately; or, that it so effects the minute and capillary circulation, as to render greater action necessary to force the blood through the distant subdivisions of the vascular system. The valves chiefly affected have been the semilunar valves of the aorta and the mitral; and in three cases, the tricuspid has been somewhat deranged. In three cases, likewise, the disease of the valves has been unattended by any hypertrophy of the heart.

"It is observable, that the hypertrophy of the heart seems, in some degree, to have kept pace with the advance of disease in the kidneys; for in by far the majority of cases, where the muscular power of the heart was increased, the hardness and contraction of the kidney bespoke the probability of a long continuance of the disease. Six cases are noted, in which the heart was soft and flaccid, and four in which it was unusually small; and in most of these, though not in all, the disease of the kidney had not proceeded to the state of contraction and hardness.

"The principal diseases of the lungs have been œdema and bronchitis, frequently attended by an emphysematous condition of certain portions. Œdema has occurred in thirty-one cases; and it is very commonly the immediate cause of dissolution, or of the increased distress towards the approaching termination of the chronic form of the disease. In six cases, recent, and in five old, traces of pneumonia were found; while the embarrassment to the circulation, caused by these various diseases of the heart and lungs, had occasionally given rise to the effusion of blood into the tissue of the lungs, in the form which is now known by the term of pulmonic apoplexy. The instances in which phthisis, or any form of scrofulous or tuberculous disease, has been connected with the renal affection, have been decidedly rare; so that in only four cases has recent phthisis developed itself: and, what is somewhat remarkable, in more than double that number the disease seems to have made a certain inroad upon the upper lobes of the lungs, and then to have sunk into a state of quiescence, or entirely subsided; from which we should perhaps be inclined to infer, that so far from these diseases being associated, the condition of the body in this form of renal disease is unfavourable to the existence of phthisis, or that it is certainly not peculiarly apt to occur in tuberculous constitutions.

"With regard to the liver and the abdominal viscera generally, as compared with the heart and lungs, a very great immunity from structural disease is to be observed; a fact the more remarkable, as the habits of intemperance with which the renal disease is so frequently connected are those which might be expected to act very directly on the liver and digestive organs. Indeed, to this day, the impression is so strong, as to the injurious effects of stimulants being manifested chiefly on the liver, that the majority of practitioners no sooner see the bloated countenance of

anasarca, connected with the history of intemperance, than they proceed to consider in what way the depraved action of the liver is to be corrected, and its morbid changes retarded. Looking to the tables before us, a very different conclusion forces itself upon our mind, as to the condition of the liver in general anasarca, and in that state of cachexia which often attends upon intemperate habits. We here find, in thirty-one cases, the liver distinctly stated to be healthy; and in nine other cases, so free from all suspicion of deranged action, as to be pointed out as remarkable specimens of the healthy organ; thus making forty in the hundred free from disease. In thirty-two cases, any deviation from the natural appearance was exceedingly slight; and was, in a large proportion of them, nothing more than that mottled state which is derived from the irregular distribution of blood throughout the texture—a condition very frequently observed, where the circulation through the chest is obstructed. The instances of confirmed diseased structure did not amount to above eighteen. There seemed to be no marked connexion between the condition of the kidney and of the liver; for nearly one-half of those cases which were stated to be remarkably healthy were coupled with the hard and probably most advanced form of the disease, while the other half occurred in cases apparently less advanced; and the more severe cases of hepatic derangement accompanied every variety of the disease in the kidney. The only two instances of fatty degeneration in the liver were in cases where the kidney was soft, smooth, and white; but in another, where the liver was somewhat fatty, the kidney was hard, rough, and lobulated.

“The stomach seems, in many cases, to have suffered from the excessive use of stimulants. In eighteen cases, the effects of irritation on the mucous membrane has been recorded: and as this is an organ which is more likely to pass unnoticed than the liver and some others, it is probable that this number would have been increased, if its condition had been more constantly or accurately examined and noted.

“The spleen and the pancreas have very generally been mentioned as healthy.

“The intestines have, in several cases, though not very generally, shown marked signs of disease. In about nineteen, the small intestines have been irritated in some portions of their courses—in a few of these, ulceration has taken place; and in seven cases the colon or cæcum has been diseased; but several of these have occurred in conjunction with tubercles in the lungs, and have therefore been scarcely ascribable to the peculiar circumstances of this disease.

“The diseases in the substance of the brain itself have chiefly consisted of that unequal distribution of blood which is apt to produce a mottled appearance when the medullary substance is exposed in slices, and which is frequently attendant on convulsive or apoplectic seizures. In some cases, the brain has been exsanguine; and in a few, the results of such lesions as the rupture of vessels may induce, have been observed.”—Pp. 395—399.

We have already adverted to the mode in which the fatal termination generally takes place in this disease, and particularly shown its readiness to terminate in an affection of the brain or its membranes, indicated by more or less stupor, sometimes convulsions, and sometimes complete apoplectic seizure. This Dr. Osborne regards as a form of *arachnitis*. “In almost all my fatal cases, when not complicated, it terminated life by the production of a low form of *arachnitis*; as was evinced by examination after death. This brought to light opacity of the arachnoid and fluid in the ventricles; the medullary fibres of the brain, however, being unusually firm and distinct.

“The invasion of this form of *arachnitis* was announced in the case of John Smith, (who laboured under *pericarditis*, with copious effusion in to the *pericardium*,) by indistinctness of vision, and moaning during sleep, by gradually increasing somnolence, and depression of spirits; and on the day preceding his death he had several seizures of general convulsions, and remained in a state of stupor during the intervals.

“In the case of Anne Doyle there was a large effusion into the right cavity of the thorax. About three weeks before death she began to complain of sounds in her ears resembling the ringing of bells. Although appropriate means were used to relieve the head, yet fits, with foaming at the mouth, insensibility, resembling that of epilepsy, and violent pains at the vertex, continued, with intervals, to her death.

“In the case of John Hacket, aged five years, who also laboured under *enteritis*,

and in whom were found several knots of *intussusceptio* in the intestines, death occurred suddenly, but was preceded by convulsive contractions of the right arm; and in addition to opacity and adhesions of the arachnoid and fluid in the ventricles, there was a softening of the surface of the anterior convolutions of the brain.

"In the case of Thomas Caffray, who had been relieved of the *adema*, and of the most urgent symptoms of chronic *bronchitis* and *emphysema*, an imprudent exposure to cold, and subsequent excess in spirituous liquors, were immediately followed by *diarrhœa* and *delirium*; the function of respiration being nearly unaffected. Within three days from the invasion of those symptoms he was found dead in his bed, having walked about the ward in a delirious state within a few hours of his death.

"In the case of James Brown, who also suffered under *pericarditis*, the fatal event was preceded by a stupor of two days' duration."—Pp. 36–39.

It appears also that occasionally death may take place very suddenly, without very evident marks of affection of the nervous system. But in all, it may be regarded as pretty uniform, that these sudden terminations, which are accompanied with symptoms of almost total *ischuria*, are connected with the retention within the economy of a principle, which ought, for the healthy state of the functions and the continuance of life to be eliminated. The presence of urea in the blood, which was proved by the experiments of Dr. Christison,\* in a proportion much greater than is compatible with health, seems to be the essential cause of these sudden deaths. The relative proportion of deaths produced by affection of the different organs may be understood from the following statement by Dr. Bright.

"The foregoing table likewise affords an instructive average of the immediate causes of death in this disease. I have been able to trace the circumstances connected with the conclusion of life in seventy cases; and find, that no less than thirty out of these seventy have died of well-marked symptoms of cerebral derangements, noted under the titles of 'apoplexy,' 'coma,' 'convulsion,' and 'epilepsy.' Eight others have died suddenly. In eight cases, the obstructed condition of the lungs has been the immediate cause of death; and in three, the effusion into the chest has hastened the dissolution. Next to head affections, the most prevalent diseases have been inflammatory attacks in the serous membranes; amongst which are five well-marked cases of peritonitis, three of pericarditis, one or two of pleuritis. Diarrhœa and other exhausting diseases have carried off several; and in every case, except two or three, death appears to have been the result, not of casual disease, but of such events as may be said strictly to belong to the condition of the kidney of which we have been treating."—P. 399.

From these observations it clearly results, that, whatever the mode in which the effect is produced, this disease has a singular and peculiar tendency to induce irritation, congestion, and inflammation, in the different serous membranes of the head, chest, and belly; and so far as it is possible to apply pathological reasoning to this subject, the chief cause of the great prevalence of head affections, as the principal cause of the fatal event, is the fact, that the meningeal affection produces a more decided and earlier lesion of the functions of the brain than pleuritic, pericardial, or peritoneal irritation does in the lungs, heart, or intestines, and that the consequent lesion of the cerebral functions more speedily suspends the actions of life. This irritation Dr. Osborne appears inclined to ascribe to the presence of the urea in the blood (p. 39;) and it is not impossible that such a substance may operate in this manner. But upon this point, which is of a more speculative nature than the other, we feel it impossible to speak with precision or confidence. The fact of irritation and its effects, congestion, and inflammation, is undoubted. But the cause is unknown.

We must observe, however, that we perceive in the whole of these facts, a most beautiful and instructive explanation of the occasional occurrence of dropsical effusion in this disease. That effusion has been very justly ascribed to inflammation attacking the serous membranes and cellular tissue; but it has not been shown why these membranes and the cellular tissue were simultaneously attacked by this disease. It may be inferred from the facts disclosed by the history and morbid anatomy of this disease, that it creates a susceptibility to irritation and inflamma-

tion in all the serous membranes, in various degrees of intensity, and that it may either produce acute inflammation with its legitimate products, albuminous exudation forming a layer of coagulable lymph, with purulent fluid, or sero-purulent effusion, or even serous effusion in various degrees of tenuity and abundance.

Before leaving altogether this subject of the mode of death in disease of the kidney, it may be proper to direct the attention of the pathologist to an important deduction which appears almost spontaneously to flow from the facts collected by the various observers of the course and termination of this disease. It has been shown both by Dr. Gregory and Dr. Bright that the disease of the kidney does not in every case produce dropsical effusion, and that it may go on to the fatal termination without the appearance of this symptom. "The disease may exist in all its force," says Dr. Bright, "and may be fatal with its insidious and sudden attacks, without the effusion of a single drop of fluid into the cellular membrane at any period of its course; and still more frequently will fatal instances be found where the anasarca having existed has entirely ceased." P. 371. It is further remarkable, that, though both in the cases in which dropsical effusion occurs, and in which this does not take place, speedy dissolution may ensue by reason of sudden affection of the membranes of the brain, or some equally intense and fatal affection of the *pleura* or lungs, the *pericardium* or heart, and the *peritoneum* or stomach and bowels,—yet the latter result is much more likely to occur in those cases in which there is little or no dropsical infiltration. It must indeed be manifest, that where intense irritation and inflammation attacks the arachnoid, or any one or more of the serous membranes, that inflammation either requires remedies so energetic as to subdue it altogether, or destroys the patient; and in either case dropsical effusion is prevented or anticipated. In cases, however, in which this irritation of the serous membranes is less intense, and proceeds in a more gentle and insidious manner, it gives rise rather to copious infiltration into the cellular tissue and cavities. But further, it must be observed that there is in this disease a species of alternate or vicarious action between the cellular membrane on the one hand, and the cavities of the serous membranes on the other. Where the external cellular tissue is highly anasarcaous, there is seldom much affection of the head or chest. In many instances, indeed, it appears, that the occurrence of anasarca diverts the action from the internal organs, especially from the brain, and tends to prolong the life of the patient.

3. In the *third* place; an important question on the etiology of the disease has suggested itself for consideration to Dr. Bright, from the facts disclosed by the tabular view of the results of dissection. It has been already seen, that this table demonstrates the existence of disease not in the kidneys only, but in almost every organ of the human body. Dr. Bright very properly allows, that we are not at liberty from these facts to infer, that the disease of the kidney has been the primary cause in which the disease of the other organs depended, since some other organ may have suffered first, and the kidneys with the others may have become involved in the general changes. He is nevertheless inclined to believe, that the morbid state of the kidney is the chief promoter of the other derangements.

It would still, however, become a just question, by what cause did the kidney itself become deranged, first probably in action, and then in structure. On this point, Dr. Bright is inclined to look upon the skin as a primary agent, and Dr. Osborne maintains very decidedly, that suppression of the action of this membrane is the great cause of renal disease and dropsy. Both authors agree in observing, that the most common exciting cause of anasarca is suppression of perspiration from exposure to cold; but Dr. Bright somewhat modifies this doctrine, by the additional condition, that it is almost as constantly the fact, that the kidneys have undergone some previous irritation, and that the urine had been previously albuminous. One of the strongest facts in favour of the primary cause being to be found in disorder or suppression of the cutaneous secretion, is the frequency of the occurrence of this disease after scarlet fever, in which the whole surface of that membrane is not only during the course of the disease very hot and dry, but long after its termination it remains dry and in a very unnatural state. Of the influence of this cause in rendering the urine albuminous, even without the positive presence of dropsical symptoms, we have had in this city very conclusive evidence during the last three or four months. Is it to be inferred that any cause which, by repressing the action of the skin, deranging the usual current of its circulation, and throw-

ing an excessive load of blood on the kidneys, may give these glands an excessive degree of duty to perform, is adequate to derange first their function, and eventually their structure? To this conclusion, several facts, and, above all, the views taken and the results obtained by Dr. Osborne seem highly favourable.

Suppressed perspiration this physician has been led to place first among the list of exciting causes, because he finds, that, of thirty-six cases of the disease, in twenty-two persons its appearance could be distinctly referred to this cause. The suppression was induced in different modes. In one man, reported of sober habits, but who was liable to profuse sweating of the feet, and who to check this wore fullers' earth in his shoes, perspiration was repressed not only there but all over the body, diarrhoea followed, and when this was subdued, anasarca with coagulable urine succeeded. In another case the commencement of the disease was ascribed to cold bathing. But the most frequent cause was remaining some time in wet clothes. To the same head, doubtless, is to be referred the fact noticed by Dr. Osborne that two of his cases ensued on attacks of the influenza which appeared in the spring of 1833. Though the justice of the following explanation may be questioned it deserves to be read. "As the excitement consequent on the suppressed perspiration takes place in the secreting portion of the kidney, and neither in the *tubuli* nor in the membranes no acute pain is perceived; and the patient is usually barely sensible of a weight in the loins or of a thrilling sensation shooting down the thighs. Hence has arisen the obscurity which has attended the formation and establishment of this organic disease." We must acknowledge our inability to perceive why excitement in the cortical portion should not be attended with pain any more than excitement in the tubular portion. Though it be impossible to deny that suppression of the cutaneous secretion is a very fruitful source of dropsical affections with coagulable urine, and is every day seen to produce in those persons whose urine is coagulable, yet, without dropsical symptoms, the most unmanageable forms of disease of the internal organs;—it may be doubted whether alone it is adequate to the formation of the peculiar disorganization of the cortical part of the kidney, now under consideration.

There is in this matter a most serious fallacy, in the circumstance, that it is quite possible, that in the cases adverted to by Dr. Osborne, as examples of dropsy induced by suppressed perspiration alone, there might have existed previous disease of the kidneys, which indeed would be rendered so much less capable of performing their duty, that by the diminished and perverted action of the skin, so much more was thus required from them. It is to be remarked that diminished perspiration does not in all persons induce dropsy or the derangement in the urinary secretion now mentioned, and its effects vary according to the constitutional and individual peculiarities, causing in one person rheumatism, in another pleurisy or catarrh, in a third diarrhoea or *peritonitis*; and in a fourth an attack of general fever. When it is followed by dropsy, therefore, there is strong reason to believe, that this particular direction of its influence is the result of the previous disease of the kidney, which is then called into open action. Of this at least we could give several pointed examples.

The cause next in frequency Dr. Osborne regards as the abuse of diuretic drinks and medicines, in other words, agents which stimulate, and sometimes to excess, the secreting vessels of the kidneys. The first agent of this class is that of distilled spirits, the habitual use of which is allowed by all the writers on this subject to be the most fertile source of this disease known. It is the opinion of Dr. Bright, from what he has seen of the disease in London, where alone he computes that it destroys not less than 500 persons annually, that by no other disease do so many persons become the prey of the vice of the intemperate use of ardent spirits. It has long been observed in Edinburgh both within the Royal Infirmary and among out-patients, that though in some instances hereditary predisposition appears to be concerned in the origin of the disorder, yet it occurs most generally in those who have been long in the habit of taking spirituous liquors, either avowedly or secretly. A common class of persons in whom it is found in various degrees in this city is that of the public females, who have, with scarcely a single exception, been accustomed for years to the frequent use of spirits combined, however, with late hours, exposure to cold, and several other causes of deranged health. Another fact to the same effect is that while it was recognized in various degrees in the kidneys of

many of those persons who perished by cholera in 1832; in no case was it found where the individual had not been ascertained to have been addicted to the use of these stimulants.

The testimony of Dr. Osborne is to the same effect. Of thirty-six cases, ten occurred in confirmed drinkers of ardent spirits; and while this class is limited to less than a third, it is justly presumed that if the truth could be ascertained respecting the mode of life of all the patients, there is no doubt that many more could have been added to the number.

Dr. Osborne further thinks that the stimulant diuretics, as squills, cream of tartar, and even the diuretic salts, are not altogether guiltless in contributing to the production of this disease. He remarks that these medicines, though of great utility in many disorders of the chest, and consequently indicated in dropsies depending on or complicated with such affections, yet when long continued, by over-stimulating the kidneys, become the means of stopping the urinary secretion, and inducing the renal disease with its consequences. (P. 34.) He remarks also that in the cases reported by Dr. James Gregory in this Journal, the most remarkable diminutions in the urinary secretion took place after the administration of squills and cream of tartar, which have the effect of stimulating the kidneys, and conversely, that in other cases in which the treatment was chiefly confined to blood-letting and purgatives, which have the effect of relieving the kidneys, a greater proportion of successful results was obtained. (P. 41.)

Another circumstance which we have observed to act in many as a cause of this disease, and which is only incidentally alluded to by the present authors, deserves to be mentioned in this place. This is the employment of mercury to affect the constitution, in some instances once only, in others repeatedly. Dr. Blackall remarked, that, under the use of this mineral, the urine not unfrequently acquired coagulable properties, in other words, that the secretion became so much deranged that albumen was found in it. Two decided examples, if not more, we have seen in which no doubt could be entertained as to the influence of this mineral, operating probably upon constitutions previously unhealthy, certainly presenting not very equivocal marks of the strumous diathesis, in producing the morbid degeneration in the kidney. Mercury seems in this case to act very much like other excessive stimulants, and by overexciting the glandular part of the kidneys, to lay the foundation of the morbid change.

We have already casually adverted to the great prevalence of this disease in reference to its most usual remote cause, viz. the liberal or rather excessive and habitual use of distilled spirits. On this subject Dr. Bright has made some researches which deserve to be known. In the *first* place, in the winter of 1828—1829, he instituted a series of experiments upon 130 patients taken promiscuously as they lay in the wards, and ascertained the state of their urine, as to coagulable or incoagulable properties. In eighteen cases he found the urine decidedly coagulable by heat, and in twelve more he found traces of albumen,—making thirty cases in 130, or one in four, and a third according to the greatest rate, and one in 7½ according to the smallest rate. According to a subsequent inquiry made in 1832, by Dr. Barlow, one of the editors of these Reports, and Mr. Tweedie upon 300 individuals, the proportion of cases amounted to one in eleven; and in an inquiry made upon 141 patients at Guy's Hospital in 1835, the proportion amounted to above one in six cases. As, however, in the cases from which the high average was deduced, the experiments were made without making allowance for certain fallacies arising from the chemical constitution of the urine, and the presence of some occasional ingredients, Dr. Bright allows that the rate of one in six cases is rather beyond the reality.

4. In the *fourth* place, as to treatment both authors concur in the necessity of looking to the circumstances of the system, with which the first appearance of serous inflammation and anasarcaous effusion is attended, namely, the suppression of the secretion from the skin; and both concur in the indispensable necessity of restoring the functions of this membrane. To this point all the remedial measures ought to be directed, and every attempt should be made to relieve the kidneys, and direct the current of the circulation towards the skin. Dr. Bright, indeed, contends that this organ may be brought to the power of exercising its functions in a very tolerable degree, without much change being induced in that symptom, which is of

all the most important,—the albuminous and altered condition of the urinary secretion. But he admits with Dr. Osborne, the great benefit of the diaphoretic mode of treatment, and allows that any want of success which he has experienced, might depend on a less vigorous adoption of this method, in consequence of reposing less confidence in its effects.

The diaphoretics employed by Dr. Bright are the antimonial powders, the compound ipecacuan powder, and the spirit of Mindererus, with confinement to bed, the occasional use of the warm bath, and fomentations, and large linseed poultices to the loins and belly. Tartarized antimony also has been found useful both by him and by Dr. Barlow; and besides these he recommends flannel clothing and residence in a warm climate.

Blood-letting, general and local, on the commencement of the disease, he regards as highly beneficial; but doubts their good effects at later periods, unless where there are manifest symptoms of inflammation of the serous membranes. Local bleeding from the head by cupping, when that region is affected, and from the loins by cupping or leeching, he also commends. We may add, that in more than one instance in which we have seen the disease resist the influence of cream of tartar, squill, and other diuretics, a general bleeding from the arm has been followed by subsidence of all the swellings, and a manifest improvement in the condition of the urine.

Among purgatives, which he regards as effectual in reducing the anasarca, he employs the saline, rhubarb with sulphate of potass, and elaterium followed by castor oil.

To diuretics Dr. Bright is opposed, but allows that foxglove is sometimes requisite, and he admits, that, though occasionally obliged to use them, he does so as necessary evils.

Among other remedies which operate more slowly and gradually through the medium of the stomach, he uses carbonate of soda in small doses, *arbutus uva ursi*, antimonials, wine of iron, and the muriated tincture.

In regulating diet he properly allows nutritive but not stimulating articles and ingredients. From the use of wine and spirits he dissuades.

The method employed by Dr. Osborne is so decidedly diaphoretic, that it requires to be mentioned separately, in order to be justly understood. The first measure is to keep the patient in bed, in order to promote the cutaneous discharge; and the first medicine exhibited is usually a purgative, in the choice of which the author avoids those articles, as compound jalap powder or cream of tartar, which have any tendency to prove diuretic, and generally employs senna mixture. He then commences a diaphoretic course, by administering foot-baths, hip-baths, or general baths of hot water or vapour, according to their effects upon the patient, who also takes at night eight grains of James's powder, with four of Dover's, and ten grains of aromatic confection, unless in case of stupor, when Dover's powder is withheld. In one case, in which no perspiration followed the use of these means, it ensued after the use of a mixture consisting of four ounces of spirit of Mindererus, one ounce of sublimed sulphur, one drachm of ipecacuan wine, two grains of watery extract of opium, two ounces of fennel water, two of syrup, and two of treacle, given in the dose of one ounce every hour. The latter ingredient is known to act occasionally on the skin.

When the vapour bath is not attended by sweating from want of reaction in the system of the patient, he is directed while in it to take two drachms of the ammoniated tincture of guaiacum. When both vapour and water baths are followed by coldness of the extremities they are discontinued. The bed is warmed for the reception of the patient on his return.

"When there was a continued tendency to coldness of the surface, unaccompanied by feeble action of the heart, the diaphoretic preferred was *Tinct. Guaiaci Ammoniat.* ℞ij. *Sulphuris Loti* ℥j. *Mist. Camph.* ℥j. *Sp. Piment.* ℥ss. or the following: *R. Carbon. Ammon.* ℥ss. *Mist. Camph.* ℥vj., an ounce to be taken every two hours. In connection with these remedies, administered in the evening with a view to procure a perspiration during the hours of sleep, warm applications were kept up during the day, and frequently a succession of bags of hot salt was maintained, when the heat of the extremities could not be otherwise preserved. When perspiration was restored in one part of the body, as in the trunk, but not in the

limbs, the latter were rubbed several times during the day with an infusion of two drachms of bruised mustard seeds in distilled vinegar, with naphtha, or some other suitable stimulating embrocation.

"Having never failed in removing this kind of general dropsy whenever the entire surface of the body was restored to a perspiring state, it is not surprising that I should bestow the utmost attention on this part of the treatment. In a great number of cases, and especially those connected with bronchitis, the patient took three times daily, an ounce of the following mixture: *R. Balsami Copaibæ ʒi. Muc. Gum. Arab. ʒiijss. Sacch. q. s. ft. Emulbio, Adde Aquæ Cinnamomi Mist. Camph. utriusque ʒij.*—The use of this was first suggested by the appearance of the mucus in the urine, which in almost every case denoted irritation in the urinary passages; and in chronic bronchitis, with scanty and opaque secretion, there is no more valuable remedy. Copaiba has been set down in the Manual of Materia Medica as a diuretic; but I never recognized this effect from it, except through its agency in diminishing irritation in the urinary passages. When given to patients who were kept under the influence of external heat, it always acted as a diaphoretic, and was peculiarly valuable in answering the indications usually co-existing in those cases."—Pp. 44–46.

Next to the restoration of the function of the skin, and indeed in most cases expedient, as contributing, Dr. Osborne says, to that object was blood-letting. The circumstances on which the indications for this measure were founded, were 1st, the full and undulating pulse, which resembled that commonly occurring in nephritis; 2d, the co-existence of inflammation in other parts; 3d, pain or weight in the region of the kidneys; and 4th, the appearance of blood in the urine. The blood drawn was not usually buffed; but the serum in almost every case was turbid. This appearance is indeed common in this disease, and depends on the presence of oil in the serum. Local blood-letting by cupping or leeches from the loins was also used under the same circumstances.

Blisters, the use of which as a means of revulsion, he allows under certain circumstances, he recommends to be induced by applying lint steeped in tincture of cantharides, and covered with oiled silk—as a mode more cleanly, more rapid in action, and not liable to tear the cuticle. The blistered surface he recommends to be dressed with iodine ointment.

In the use of purgatives, which he appears to have employed little, he was influenced by the apprehension of inducing diarrhœa, and the desire to determine towards the skin; and those preferably employed were senna mixture, castor oil, and rhubarb and magnesia.

Calomel, though found useful in obviating effusion in affection of the head, he regards as beneficial neither to the action of the skin, nor that of the kidney; and he remarks, as Dr. Bright already has done, that it seemed to cause salivation with unusual rapidity.

It is no small proof of the beneficial effects of the method now described that among thirty-six cases treated according to its principles, twenty-seven recovered with disappearance of *œdema*, only nine having died. It is true that the albumen did not entirely disappear; but the patients felt themselves sufficiently recovered to require no further treatment.

In two cases under the use of iodine given at the rate of one grain and a half, with three grains of hydriodate of potash in a pint of water, in the course of the day, the *œdema* disappeared, and the urine completely recovered its colour and transparency, and became so much less coagulable, that had these patients remained in hospital longer, Dr. Osborne thinks that the albumen would have entirely disappeared.

Complications with local inflammation, as *bronchitis*, *pericarditis*, and *peritonitis*, or with symptoms of diseased heart, he opposes by the judicious application of appropriate remedies.

In conclusion, Dr. Osborne gives the following summary of his pathological views and therapeutic measures in this disease, which must be regarded as rational and judicious.

"1st. That it is always connected with disease of the kidney, which when sufficiently advanced, is marked by the deposition of a grayish structure, impermeable to injections, within the substance of that organ.



"2d, That the suppression of perspiration is the most general cause of this disease; and the long-continued excitement of the organ by spirituous liquors, or diuretics, the next in order of frequency and importance.

"3d, That the most successful treatment consists in the restoration of the functions of the skin; which being accomplished, the disease, if free from complications, never fails to be removed.

"4th, That bleeding and purgatives are also suitable remedies; while diuretics are either injurious, or, if removing the swellings for a time, tend ultimately to cause a return of the disease, under a more aggravated and intractable form."—P. 61.

In these views we entirely concur, and recommend their consideration to our readers of every rank and order.

We must say, nevertheless, that we are not prepared to admit unconditionally his inference, that this disease is to be viewed as a species of *Anidrosis*, or want of cutaneous action. This we regard as a mistake, not much less than that of referring it to the head of dropsies. The dropsical effusion is a mere symptom, and not a constant one. The dry unperspiring skin, in like manner, though more uniform, may be nothing more than a symptom.

IV. We have now, after a digression rather long, to proceed to the consideration of the fourth cause of dropsy assigned by Dr. Osborne, viz. inflammation. Of the reality of this as a cause of effusion into the cavities of the serous membranes no doubt can be entertained; for every one of these membranes is more or less liable to become distended from the operation of this cause. Upon its exclusive operation, however, some doubt has been thrown by the discovery of the facts already considered under the last head. Excepting, therefore, the case of *hydrocephalus*, it must always become a question, in any given case of dropsy, whether it depends on inflammation connected with disease of the kidney, or on inflammation, which is primary and independent of that malady. Dr. Osborne himself admits in the report before us, that "it is generally accompanied by the peculiar disease of the kidney above described, and has consequently been thought to be always accompanied by coagulable urine." (P. 64.)

At one statement made under this head, we are somewhat surprised. Dr. Osborne says, that "in *anasarca* after *scarlatina* no coagulation takes place." This we conceive must have been made without due consideration. Independent of the experience of the present year, in which we have found the urine coagulable after *scarlatina*, both with and without dropsical effusion, if Dr. Osborne will refer to a paper by Mr. Hamilton in the thirty-ninth volume (p. 140.) of this Journal, he will find conclusive evidence to show, that the urine may be coagulable after scarlet fever, and that the structure of the kidney may be exquisitely changed. Mr. Hamilton showed us, at the period referred to, the kidney of a child cut off after scarlet fever, in which the buff-coloured granular deposit had taken place to a great extent, and in a very distinct form.

These several facts would tend to abolish entirely the head of inflammation, as an exclusive and separate cause of dropsical effusion, since it would naturally arrange itself under the head of disease of the kidney. The propriety of this innovation may nevertheless be questioned; and though we feel it requisite to point out the objections to which it is liable, and to notice the fallacies on which its admission depends, we perceive no great harm in allowing it to hold its place, in so far as it is the immediate circumstance on which the dropsical effusion depends. The distinction involves almost no practical difference, since the treatment is nearly the same.

## PHRENOLOGY.

THE most exacting phrenologist cannot complain of any deficiency of notice of his favourite science by literati and savans, zealots and bigots, within the past year. Of the style of commentary, fairness of argument, or fulness of thought applied to this subject, he may not perhaps be able to speak in very flattering terms; nor to

regard with much complacency his own position, according to the showing of the critics. An amended tone of stricture and criticism is, however, very obvious in most of the Journals, pretending to any character, in which phrenology has been discussed of late. Whether this be any evidence of increased respect for the subject, or of deference to its numerous advocates, or merely of a higher standard of ethics in literary discussions generally, we will not take upon ourselves to determine. The (London) Quarterly Review contains, in a short article, animadversions on the system of phrenology, untrammelled certainly by principles of mental philosophy, and innocent of consecutive reasoning agreeably to any system of logic, whether scholastic or practical.\* The concluding sentence has this affirmation: That no man of distinguished general ability has hitherto announced his adhesion to their (the phrenologists') creed. The reply to this might be, that there is no man of *distinguished general ability* whose cerebral development and cranial configuration do not confirm the doctrines of phrenology. But again, critics like doctors will differ, even when professing to swear by the master, let truth come as it will. Dr. Prichard closes his recent and valuable work on *Insanity*, which we hope soon to place before our readers, with a summary view of the claims of the phrenological school. Though adverse to it, he admits that phrenology has obtained many zealous advocates in different countries, and that some of them have been men of *distinguished talents and extensive knowledge*.

The theme is continued in a similar spirit, if not in echo, by the American Quarterly for last December. The drift of the writer is to show the fallacy, we use a mild word, of the craniological part of the science, or of organology; and in doing this, to subvert, as he thinks, the whole system. He does not seem to be aware that, apart from the study, or demonstration of the connexion between structure and development and function, or in other words, of its physiology, this system, with reference merely to its psychology, is far in advance of any other with which philosophy has yet enriched the world. Unlike those laboured and unnatural hypotheses, which placed the mental operation of man and animals in direct contrast, by making reason the characteristic of the former and instinct that of the latter, and which attempted to support this view by arbitrary definitions, phrenology has clearly shown, what the common sense of mankind, notwithstanding the fogs of metaphysics, always had glimpses of; viz. that in all animals, from the lowest up to the highest, there is a gradation in their mental powers, as we see there is in their bodily structure; and that a view of the entire series exhibits to us, in a wonderful degree, the harmonies among created beings not less remarkable in the former than they are now so generally admitted to be in the latter. *Comparative psychology*, before unknown or involved in the most revolting contradictions, was at last rendered by Gall and Spurzheim, instrumental to the elucidation of man's mind—his appetites, propensities, and sentiments. The elements of his boasted intellect are, also, seen to be active in some of the lower animals. In this way, the whole animal creation is placed before us, not, as heretofore, for idle wonderment or profitless speculation, but for illustrating by the closest analogies our own nature.

The reviewer, in the American Quarterly, among other oversights, does not seem to be aware of the restoration of mental philosophy, from the state of insignificance

\* The reader who cannot have access to the Review itself, either in its primitive English dress, or in Foster's useful American reprint, will find this article in Littell's Museum for December last.

into which the followers of Locke had reduced it; when, with the denial of innate ideas, they conjoined that of all natural diversity in morals and intellectual powers. Whatever differences were noticed through life were attributed by these pseudo-philosophers, (Condillac, Helvetius, and others,) whom anti-phrenologists are not backward to quote as authorities, to the suggestions by external objects, and were explained on the doctrine of association. From these puerilities, more degrading to philosophy than the Della Cruscan rhymes and conceits to true poetry, men were withdrawn; and their attention was once more put in the track of nature and common sense by the discoveries and writings of Gall. The innateness of moral feelings and of the intellectual faculties, was brought to light, and enforced by such copiousness of facts, and comprehensiveness of reasoning, as to place it beyond doubt, though it may still be within the reach of cavil. The history of genius in individuals, and of government and laws in different people and races, becomes again valuable, because understood and appreciated; and it is calculated, as illustrative of the doctrines of phrenology, to aid and improve education, and to systematise in a proper manner the labours of jurists and legislators. So far have the minds of intelligent persons been carried by the lights of phrenology in advance of the old boundaries, that a certain class of critics now urge, in objection to the science, that it has taken advantage of the obscurities, difficulties, and jargon of the olden metaphysics, to substitute a scheme which is more in accordance with facts, and which solves or explains difficulties before insurmountable. Calling it a cabala, or a hocus-pocus, these critics still reluctantly admit that it tells them more, and more consistently, of human nature, than they had before learned by their favourite scholastic methods. The seed, they say, is bad; and yet of it comes fruit of a quality which they confess they have not seen equalled.

This last comparison suggests to us the title of a work, which we are sorry, both on account of its author, and still more for the sake of true religion, in which justice and charity are such beautiful ingredients, ever saw the light.

Our reference is to a recent production by Dr. Reese of New York, entitled *Phrenology known by its Fruits*,\* in which the author asserts broadly, but without any proof, or show of reason, that this view of mental philosophy "leads to coarse infidelity and irreligion," and that "there is a mutual and irrepressible repulsion, which must eternally separate phrenology from Christianity." These assertions are quite as strong, and in the same spirit, and quite as true as those made in times long past, against Galileo for his advocacy of the Copernican system, and at a subsequent period against Locke, for those views of the mind and its faculties which have since been taught and commented on so fully in the most orthodox institutions of learning. We have not read Dr. Brigham's work, nor do we feel ourselves called upon to defend either his heresies, or those of any other phrenologist, supposing them to have been advanced; but, that phrenology, from any peculiarity in its doctrines, leads the mind naturally, or necessarily, to infidelity or irreligion, will be credited by us, so soon as we hear devout and pious members of the Scotch church aver that its doctrines carry their believers into mystic rant and delirious ravings, derogatory to religion and morals, because the unfortunate Irving, once an ornament of that church, was led to countenance these extravagances and to teach unsound doctrine. By a parity of reasoning with that of Dr. Reese, the enormities

\* Being a review of Dr. Brigham's late work, entitled "Observations on the Influence of Religion upon the Health and Physical Welfare of Mankind."

of the Anabaptists of Munster, so forcibly depicted by Robertson,\* should be regarded as the fruits of Luther's doctrines, and of the Protestant reformation; the burning of Servetus, the first fruits of Calvinism; and the cold blooded murder of Cardinal Beaton, the fruits of John Knox's preaching, and of Scottish presbyterianism. Surely it must be seen, that extravagances of opinion and disorders of conduct, however discreditable to the individual, ought not to be laid at the door of that sect, or school of which he is nominally a member, provided its tenets are pure in principle, and clearly efficient to guide to an upright and righteous life. We make these remarks in reference to the mode of argument adopted by Dr. Reese; not that we believe them applicable to the case of Dr. Brigham, who, for aught we can learn, amidst the unmeasured assertion and fierce denunciation of the former, (his reviewer,) may be both a consistent Christian and a zealous phrenologist.

Dr. Reese thinks it is a monstrous notion, that there should be a part of the brain through which man has a sentiment that prompts him to devotion and to the worship of a God, or at least of some superior and invisible powers or beings. His objections are two-fold:—first, against the alleged connexion between the sentiment, and the material organization; and secondly, against the innateness of the sentiment. The author admits himself, "that the brain is the organ by which the mind acts,"—and again, that "the brain is the material organ of the mind." Without the brain, therefore, there could not be, as we infer from Dr. Reese's own showing, any manifestation of mind, either of moral or religious feeling, or of intellect. Hence we see that, in this part of the argument, the difference between Dr. Reese and Dr. Brigham, is one purely of a scientific or physiological nature; the former affirming of the whole brain what the latter believes is done by a particular part of it, which is called the organ of theosophy or of veneration, in the language of phrenology. Neither of these writers is a whit more or less a materialist than the other; neither, from this showing, is entitled to call the other a fool or an infidel. But Dr. Reese is peculiarly denunciatory on the point of the alleged innateness of the religious sentiment, which, according to his gloss, "phrenologists tell us, proves that religion is founded in nature, and they generally agree that it has no other origin." This reviewer acknowledges in the introduction, that, although for some time nominally a phrenologist, and an honorary member of some phrenological societies, he had not attended to, or studied phrenology. We wish that, overcoming his horrors at the view with which his first superficial readings in it inspired him, he had gone a little deeper; he would then have seen the distinction so clearly and emphatically laid down by phrenological writers, between the innate sentiment or tendency to worship, and suitable ideas and modes of manifesting it. The natural man, furnished with a particular portion of a material or cerebral structure, has, according to the phrenologists, a susceptibility or sensibility to devotion; but its direct manifestation, and the consistency of the acts of his life, will depend both on the relative size of other parts of the brain and the strength of their corresponding faculties, and on the extent and degree of tuition to which these are subjected. Revelation furnishes the appropriate excitement and aliment to the pre-existing susceptibility. True religion, according to the phrenologists, is the product of revelation operating on this sentiment.

But will Dr. Reese assert, that this alleged tendency to worship among mankind

\* History of Charles V.

generally, and the various degrees in which it is manifested, is a dream of phrenologists. On the first point we would refer him to the displayed feeling of man in every climate and age, whether of civilization or barbarism; and in the latter, to the Book, with the words of which we may presume him to be familiar, however much in his intolerant zeal, he proves himself wanting in its spirit. What else but this different degree of religious sensibility is indicated in the parable of the Sower and the seed.

His continued misapprehension of the real function of the organ of veneration, or as it has been termed, not perhaps with all desirable fitness, the religious sentiment, explains the mistatements which abound in the angry strictures of Dr. Reese on Dr. Brigham's essay. That men in all ages of the world, deprived of the lights of revelation, and under the impulse of this sentiment, which, be it remembered, is not supposed, any more than *benevolence* or *hope*, in the phrenological school, to form ideas, should have shed the blood of their fellow-creatures, either by human sacrifices or in devastating wars, and in so doing have thought they were propitiating the favour of the Deity, or of their many gods, need not surprise us. The more these atrocities have been committed, the stronger is the proof of the weakness of the *natural* man, and the more cogent the argument of the necessity of revelation, to give this nature suitable direction and ideas. This, as we have learned and understood it, is the phrenological doctrine,—though certainly it is not that which has excited Dr. Reese to such rabid manifestations.

If, in modern times, and in civilized and nominally christianized Europe, its people have been engaged in wars called of religion, neither the fact nor the annunciation of it can be referred to phrenology, however much these may be explained by its doctrines. Phrenology cannot be made responsible for the light in which the Crusades undertaken for the recovery of the Holy Land, have been regarded by historians, moralists and truly religious teachers. The wars of the League, the expedition against the Albigenses, were additional evidence of misdirected religious fervour, of the misapplication, a phrenologist would say, of the sentiment of veneration. He is not the first to call these, and we might add the thirty years war, and the struggle of the Seven United Provinces against the cruel and unrelenting Philip of Spain, wars of religion. To designate, however, the waste of human life, the various atrocities committed, and the devastation of cities and fertile countries, in these wars, the fruits of religion; because religion was made the pretext, or even because they shot up as a rank sucker from the tree of the true faith, or because clerical dignitaries sometimes lead armies in the field, and often urged and directed extreme and violent measures in council; to term all these, we say, the fruits of religion, would be abhorrent from our feelings, notwithstanding the example of such false logic is set by Dr. Reese, in what he is pleased to call the *fruits of phrenology*.

The reviewer contends that Dr. Brigham, in addition to his *infidelity*, exhibits himself as "an example of a man, a gentleman, a scholar, and a physician, undertaking to enlighten the community upon a subject [religion], in relation to which he betrays not merely a deficient knowledge, but *total, absolute* ignorance." It does not come within the scope of our present remarks to inquire how far this sweeping assertion of Dr. Reese is correct. The latter is not, however, particularly happy in his specification of the charge. In reply to the observation of Dr. Brigham, that, "in Abraham we do not find that nice and lofty sense of veracity which distin-

guishes a state of society where the point of honour has acquired great influence," he (the reviewer) says, that had the author been at all acquainted with the Bible, he would never have hazarded his reputation for intelligence and candour by such an assertion. Abraham's "*nice and lofty sense of justice, politeness and honour in the transaction recorded, chapter xiii,*" (Genesis,) are then emphatically pointed out by Dr. Reese. But why should the critic suppose his readers, especially his religious readers, to be oblivious of the lapse of truth, in the Jewish patriarch, in the instance in which this latter passed off his wife Sarah for his sister, to the Egyptian king: Gen. c. xiii. v. 13. It was, most probably, this deceit and untruth to which Dr. Brigham had reference, when giving the opinion above quoted, and which has drawn on him the angry animadversion of the author of the *Fruits of Phrenology*.

In what a strange attitude does Dr. Reese place himself by his intemperate zeal! He has committed the very fault which he charges on his opponent! With not merely deficient knowledge, but we are afraid we must add, in his own language, 'total, absolute ignorance,' he writes and animadverts on phrenology, and denounces phrenologists as infidels of the worst grade. We prefer, in a spirit of charity, and with sorrow for the false step now taken by a zealous well-doer, and our associate, in some schemes of wide philanthropy, to suppose him guilty of ignorance, rather than of purposed misrepresentation. What tyro in phrenology will be found to assent to the unjustifiable assertion of Dr. Reese, in the following words:—"All phrenologists agree in attributing the *faculty of speech*, and the power of articulating sounds to the *eyes*, and great skill in the use of language to their *prominence*." And again, he tells of the "discovery of the organ of *memory* being located in the eyes." Were this reviewer to assert that all physiologists agree in attributing the faculty of singing to the teeth, and great skill in the gamut to their size, he would be as near the facts of the case, as in the sentences just quoted respecting the creed of phrenologists and the discovery by Dr. Gall. All phrenologists agree in attributing verbal memory, and facility of acquiring a knowledge of various languages, to a particular part of the lower and anterior region of the brain, which, when full, is apt to give a projection to the superior orbital plate, and a consequent prominence to the eye; and at the same time, to make this organ appear pressed as it were towards the lower part of the orbit. His subsequent remarks, expressive of his surprise that any person should for a moment suppose, "that the structure and relative position of the eye, while it is so admirably adapted by the Creator for the purposes of vision, is, at the same time, designed to impart the faculty of speech, and the articulation of sounds," are about as relevant to phrenology as would be an expression of wonder, that the teeth, so admirably calculated, by their hardness and points and edges, and their position, for the purpose of mastication, should be, at the same time, designed to impart the faculty of singing and an ear for music.

A physician may, it seems to us, notwithstanding the denunciatory denial of Dr. Reese, legitimately discuss the effects of baptism by immersion on the health of the feeble and the aged, and of infants, in cold climates and seasons, without being, therefore, regarded as inimical to baptism by sprinkling, or charged with infidelity. He may, we should think, also, enjoy, in this land of freedom, a privilege, which his professional brethren have exercised in countries where papacy and despotism prevail. In these, serious objections had been raised against performing the rite of public baptism, in the large and cold cathedrals in the winter season; and in consequence of the representations of physicians respecting the mortality among infants from the exposure just indicated, dispensations were obtained for postponing the bap-

tism to a more genial season. In the fasts prescribed by the Catholic church, a dispensation may, we believe, be obtained by an individual whose health would otherwise, on the representation of his physician, be made to suffer by their rigid observance.

Dr. Reese concedes to Dr. Brigham the exercise of his right of pointing out the best manner of building, and of furnishing houses of worship, so as to make them comfortable; and of censuring the carelessness so prevalent in these respects, and so prejudicial to health. But when Dr. B. takes up the subject of night meetings, our censorious reviewer withdraws his privilege, and rebukes him in his usual emphatic manner, aided by quibbling unworthy of himself and the subject. The question of the effects of night meetings on the health of these who congregate in churches is stated by Dr. Brigham, perhaps with too much fulness. Be this as it may, we can neither approve of the spirit which is evinced by his opponent in the argument, nor the disregard by the latter of medical experience from the facts. It is no denial of the diseases induced by religious night meetings, to say, as Dr. Reese does, that assemblages of people for secular and profane purposes are still more destructive to health than the former; nor can an accusation be fairly made against a writer, because, as in the case of Dr. Brigham, he has not introduced into his essay, arguments and illustrations on other subjects than that of which it was his express purpose to treat. As regards the matter of fact, we can only say, that Dr. Reese must have seen or heard of a number of deaths from hydrophobia, if there be any value in the following assertion, in reply to Dr. Brigham's statements. "For we hesitate not to aver, that the most accurate statistics will prove that more females die every year of *hydrophobia* in the various parts of this country, than of diseases produced by religious meetings. We regard the doleful predictions and lamentations of this alarmist, as evincing profound stupidity and meriting supreme contempt." Having been ourselves instrumental, acting on the grounds of professional duty, in deterring, from time to time, our patients and invalid friends from attending religious night meetings, we must come in for a share of the compliment conveyed in the last sentence of the above quotation. There is but one mode of settling this vexed question between practising and observing physicians on the one side, and the advocates of fanaticism and intolerance on the other. Either natural causes exert their customary effect on persons who attend these meetings, or there is a suspension of their operation by a special interposition of Providence; and they, who, from such exposures elsewhere, would experience an aggravation if not a primary attack of affections of the lungs and heart, marked by coughs, pains and palpitation; or of the brain and nerves, indicated by hysterical paroxysms, convulsions, and deranged sensations; or of the digestive apparatus, constituting dyspepsia, enjoy an entire exemption from all these. If it be contended that a standing miracle is performed in favour of church-goers at night, we have nothing further to say; but unless this be pleaded, we must demur to the allegations of Dr. Reese, and would invite him to enlarge his observations a little more on this subject.

Camp meetings is another topic dwelt on by Dr. Brigham, whose inferences are either denied, or ridiculed and vilified by Dr. Reese. The same mode of reasoning should be pursued here as in the case of night meetings at churches. Personally, we have no experience in this matter, and cannot therefore affirm our conviction to rest on the same basis as in the instance of night meetings.

The subject of revivals of religion is one which, although under some of its aspects, may be properly examined by a physician in his professional capacity,

ought always, and by all, to be approached with a subdued and chastened feeling, and a deep conviction of its importance and sacredness. Content with claiming the right for our profession, and affirming its ability, both by the aids of physiology in general, and of phrenology in particular, of inquiry into the physical evidences and effects of what are technically called revivals, we forbear at this time and in this place from any attempt at their farther elucidation. We shall not abstain, however, from repeating a maxim, equally true in physiology, as it is in morals; that every violent excitement and exaltation of function, is in the very nature of man's constitution, of short duration, and is followed by lassitude and diminished sensibility, and often irregular and unhealthy movements of both mind and body.

Dr. Brigham, when affirming, that, in all ages, religion has been one of the most fruitful sources of insanity, commits a grave error, which certainly does not find its support in phrenology, nor confirmation in the statistics of this disease. Here, at length, Dr. Reese has, we are glad to discover, the right of the question; though we cannot at the same time but wish that he had not weakened his position by needless volleys of wrathful interjections and vituperative accusations. One of his remarks on insanity, where he says: "it is plain that the essence of the disease consists in some organic affection of the brain, even when, as in many cases, we may be unable to discover the nature of the structural alteration by dissection itself," is calculated to draw down on him, from even some of his well educated religious brethren of all denominations, anathemas as severe and unparing as those which he has himself lavished on Dr. Brigham. He is, we fully believe, correct in his view; but the manner in which its annunciation will be received by many of the orthodox anti-phrenologists, those by whom he would expect to be hailed as brother, ought to be a lesson of charity to him in his war with phrenologists. We cordially join him also in the conviction that religion is both preventive and curative in its effects. Suicide, that most extended and worst form of monomania, is, we believe, in a very large majority of cases, caused by a want of religious feeling, or of confidence in an all wise and omniscient Being, and in the doctrine of atonement.

Dr. Burrows has, we think, the most correctly indicated the manner in which the mind is disturbed and deranged by religious travail, by his showing that the perturbation and danger are during the season of doubt and anxiety, accompanying self-conviction of sins and preceding a thorough conversion. The danger is greatest in minds naturally weak; but surely, the end to be obtained in all, justifies the risk to be run with a few. The creed once fixed, insanity seldom appears from simple religious excitement or fanaticism. An interesting experiment on the salutary influence of religious exercises, in the presence of, and undertaken with a view to their participation by, the insane, has been lately made in some of the English asylums with entire success. Decorum was preserved by all; an interest excited in many, and suitable inquiries and reasonings made by a smaller number.

Dr. Brigham is reproved by his reviewer for arrogance in pretending to advise the clergy, respecting the advantages to them of a knowledge of anatomy, physiology, &c.; that is to say, of the structure and functions of the human body, and of the numerous and diversified agencies by which it is modified—subjects constituting in fact the best part of natural theology. We are at loss to see the criminality of counseling men on matters which are intimately connected with an efficient discharge of their duties, both as regards themselves personally and their fellow men. Surely a minister of the gospel, to whom is entrusted the care and cure



of souls, should be supposed to know human nature; not alone as taught in doctrinal disquisitions, but as exhibited and modified by its material casement. He, who so oft discourses on life, and death, and immortality, might, one would think, both enforce and elucidate his propositions by reference to the structure of the human body, its various functions and wonderful mechanism, yet ready derangement and inevitable decay. With a more accurate knowledge of the influence which the body in its various ailments exerts over the mind, and the correspondingly various degrees of impressibility of this latter to advice—remonstrance or exhortations, the pastor might so direct his discourses from the pulpit and conversations in the sick room, as to make them more frequently productive than they are of the good proposed. The rules for the preservation of health, are so closely blended with some of the soundest maxims in morals and best precepts in religion, that the latter cannot be enlarged upon, nor brought home to the feelings and understanding of men, if the teacher be neglectful or ignorant of the former. The present misery which sin entails can never be fully or adequately enforced by the preacher, who is ignorant of the nature of the symptoms of the penalty paid in bodily distress and loss of health. The connexion between good health and good morals, or the enjoyment of the former, depending on an observance of the laws established by the Creator, furnishes the spiritual counsellor with a text on which to discourse, in the particular instance of aberration, with unction and profit,—with a full appreciation of causes and a greater certainty of prevention. General denunciation of wrong and crime is little better than declamation, which startles at the moment but gives no precise direction to shun, nor specific mention of penalty. There is indeed one kind of penalty which preachers are not backward in pointing out, but that is in the dread future, and does not form a part of the present branch of inquiry.

Natural history and science in general, ought to be more cultivated and better understood by the members of the clerical profession, in order to enable them both to illustrate and suitably adorn their discourses on the wonders of creation, and the power and wisdom of the Creator, and to check that irritable jealousy, usually the growth of ignorance, towards freedom of scientific investigations. When these run into extravagance, their absurdities could be readily detected and exposed by the scientific clergyman; and their injurious tendencies, when they conflict with the literal meaning of sacred writ, much more happily prevented by arguments and facts drawn from science than by arrogant assumption of infallibility for all his doctrines, and fierce denunciations of materialism, infidelity and the like against his opponents. The frequent practice of short sighted and often ignorant zealots, of holding up science and its votaries, as inimical to religion, is itself most irreligious, since it severs from the church many who cannot be persuaded, that in studying nature, they are warring against nature's God, or that explanations of phenomena in general, and of those of mind in particular, are rank heresies, inimical to a belief in revelation, and to the value of those inspired lessons which have been put on record for the guidance of mankind.

Since the preceding remarks were penned and put to press, we have seen, in the Knickerbocker Magazine for January, a notice of a letter from Dr. Brigham in reply to what we fear we must now call the slanderous imputations cast on him by Dr. Reese. The latter professes to quote the following words from the work he reviews "In all ages, religion has been one of the most fruitful sources of insanity." Dr. Brigham replies, "*You have made up this sentence*, and attributed it to me." In several sentences also, Dr. B. asserts, that his critic has inserted the word 'only,' so as to distort the meaning; in others 'on,' is substituted for 'by,' &c.

The whole strain of Dr. Reese's strictures, and his gross errors in statement of some of the phrenological facts and doctrines, made us slow to credit his accusation against Dr. Brigham, whose work, as already stated, we have not yet seen. Our caution was, it now seems, well timed. Let us hope that the signal failure of this attempt of Dr. Reese to deal damnation round the land, will serve as a salutary warning to zealots, fanatics, and bigots, of whatever sect or denomination, against their enlisting the truths of Holy Writ, and assuming the garb of extreme piety, in order to protect and conceal their own ignorance of science and of letters. Poor is the compliment paid to any church by such persons professing to be the defenders of its faith.

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*A Manual of the Diseases of the Eye.* By S. LITTELL, JR. M.D. One of the Surgeons of the Wills' Hospital for the Blind and Lame, Fellow of the College of Physicians of Philadelphia, &c. &c. Pp. 255, 12mo. John S. Littell, Philadelphia. 1837.

This Manual of the Diseases of the Eye, by Dr. Littell, is prepared from good materials, well digested. It is, also, well arranged and well written. The divisions are natural and simple, the descriptions of morbid structure and symptoms clear, and the treatment is for the most part definite, precise, and available. Nothing is laid down on speculative grounds; nor do we see any evidence of personal and professional vanity peeping out, in the shape of alleged novelty of view, or of peculiarly successful practice. The author rejects these means of throwing dust in the eyes of the inexperienced and uninitiated. His object was to put things in a clear, but not a false light, and in this he has been successful. His duty now discharged, it remains for his professional brethren, and especially the junior portion of it, to perform theirs, by their availing of the information which he has offered to them.

General anatomy, in showing us the tissues of which the eye is composed, and that it is in this respect a miniature of the whole body, would naturally prepare us to understand the morbid changes of each of its component parts, and prevent that ignorance, timidity, and empiricism which have so remarkably distinguished the treatment of the diseases of this organ. These have been thought, by not a small number of medical men, to have something peculiar, if not specific in their nature, by which they differ so much from diseases of other organs. Hence some will be heard to say that they are not conversant with the treatment of this or that affection of the eye; and that surgeon such a one had better be consulted in the case. To our minds it is very evident, that a medical man who, with all the aids to symptomatology of the affections of the eye, from its external position, cannot appreciate the nature of the morbid changes, nor undertake the treatment of conjunctivitis, iritis, or scleritis, ought not to attempt the management of gastritis, carditis or pleuritis, or think of prescribing for arthritis or for rheumatism. He does not stand pledged to prejudge the precise condition of the tissue of the eye, which is morbidly affected, by declaring whether it be acutely inflamed, or passively congested, or merely enfeebled. He has the same privilege here as in any other disease; to make up his mind after and from a review of all the circumstances of the case—the antecedent exposures which would cause common inflammation; prior attacks of gout or rheumatism in other organs, or of gonorrhœa, syphilis, and mercurial disease; the subsidence and disappearance of cutaneous eruptions, &c. The symptoms, which at the outset indicate acute inflammation of the eye, are as clearly

marked as those of phlogosis of any other organ, and as imperatively call for a similar treatment to that which would be had recourse to in the latter. Nor is it a whit more difficult to determine with precision, whether we have to deal with inflammation of the conjunctiva, or of the sclerotica, than to ascertain, in gastritis, whether it be the mucous or the serous membrane affected, or, in carditis, whether it be endo-carditis, or carditis simple. It will be said, that, even though we have recourse to the most vigorous treatment for removing inflammation in some part of the eye, the disease still persists, accompanied by much pain and suspended vision. But do the affections of the eye alone embarrass us in this way? Are we not just as often brought to a stand still in inflammations of the mucous, serous, and still more the fibrous and sero-fibrous membranes in other parts of the body? To know when we have carried depletion, sanguineous and by revulsion from the bowels, kidneys and skin, to the desired extent in phlogosis of the eye, or of any one of its tissues, and when counter-irritation and stimulating remedies are required, is a problem no more difficult of solution in this case than in a disease of any other viscus or organ. Neither is easy; but if we do not despond in the one case, we assuredly ought not to feel or confess hopelessness in the other.

It is, certainly, no easy matter for a physician to be able to say to what extent the violent pain in ophthalmia (we use the word in a general acceptation,) depends on mere phlogosis, after the disease has lasted some time, or on neuralgia,—exalted sensibility of the nerves or congestion of their neurilema. At this juncture, when yet hesitating whether to continue the depletion, or alter his practice, a professional friend may suggest stimulating applications to the injected membrane and irritable eye, and perhaps with good effect. But the practice here does not rest on an assured basis. In another case, the like change, under apparently similar circumstances of duration of the disease and prior treatment, will be attended with any thing but satisfactory results.

There is a stationary period in many of the acute affections of the eye, which is discouraging to the patient and friends, and embarrassing to the professional attendant. The latter, if he be properly self-possessed, and have done his duty, by prompt and energetic treatment in the beginning, has no fears respecting the preservation of the function of the organ, or of the integrity of the tissue immediately attacked; and he can wait with more patience for a solution of the difficulty than the patient himself. Time is required for relief to be procured, however much the hopes of the sufferer may be buoyed up by new and various remedies and adjuvant advisers.

We would suggest to Dr. Littell, the propriety of an Introduction to the next edition of his Manual, for it must certainly reach another edition, in which the above topics should be embodied in a clear and succinct manner and style, such as the public now know him to be master of.

If we were to be critical on the work before us, we should express a wish, that the author had been somewhat more minute and specific in his directions for the general or constitutional treatment of the various affections of the eye, which do not directly come under the hands of the surgeon. The space occupied in his pages by a detail of the external and topical applications to the eye and its appendages is much greater than that given to an account of the internal remedies, and of those intended to act on the system by revulsions and counter-irritation. If their importance were to be measured by their effects on the diseases of the eye, we should be inclined to reverse the proportion of space thus awarded to them. Deprived of the agents by which he acts on the vascular and nervous systems and the digestive

apparatus, the physician, in these diseases, would make small progress in their cure. There is, indeed, a particular time in conjunctivitis, as well as in sclerotitis and iritis, in which topical applications are attended with the best effects, and would seem to give a salutary turn to the inflammation. But it will also be conceded, that in the first and acute stage of all the phlegmasiæ of the tissues of the eye, that in which there is the greatest danger of disorganization and irremediable loss of function, the only collyrium which with any confidence can be recommended is simple tepid or warm, or, on occasions cold, water. Every practising physician knows the mischief done by the early resort to astringent and stimulating collyria in the first stage of ophthalmia; nor is the error committed always on the recommendation of unprofessional friends. In certain varieties, as in purulent ophthalmia, these topical applications may indeed be had recourse to much sooner than in any other of the diseases of the optic tissues. Though even here, the propriety and indeed necessity of the early use of stimulating collyria ought not to retard, still less exclude, the adoption of a suitable antiphlogistic treatment. Of the two pages and two thirds of a page, given to an account of the treatment of the *purulent ophthalmia of Infants*, in the 'Manual,' we find the greater part taken up with a detail of the topical applications, unguents and washes, to the eyes. In certain specified conditions of the parts, the abstraction of blood by sacrifice, or the application of one or two leeches to the upper eyelid, or to the root of the nose is recommended. But the subject of internal remedies, during the disease, or at least before sloughing takes place, if this unwished for change should occur, is dismissed in the single short sentence: "Advantage will also be derived from the use of aperient medicines." This important class of remedies merits, we should say, from our own experience, more than such an incidental and summary notice. Their use constitutes a highly important part of the treatment of the disease: nor is it a matter of indifference what we select from the class, or in what number they are combined. Calomel, followed by rhubarb and magnesia, is entitled to the preference; and a free state of the bowels maintained by the latter combination, or by salts and magnesia, with an occasional return to calomel and rhubarb, is a part of the subsequent treatment, which will be found decidedly beneficial. We have witnessed a free detraction of blood, even by venesection, attended with the good effect of abating in a marked manner the puriform discharge and the intolerance of light.

It would have been better if Dr. Littell had been more explicit, on some occasions, in directing the use of therapeutical agents. Thus, for example, when, in the treatment of opacity of the cornea, he says,—“The primary indication is the removal of any existing inflammation, by the local abstraction of blood, counter-irritation, and other appropriate measures,” the young practitioner will naturally ask how, and where is the blood to be drawn? by cupping or leeches? and if by the latter is it to the eyelids or to the temple near the external angle of the eye? What are the means meant to be recommended for procuring counter-irritation, and what are the “other appropriate measures?”

We stated in the opening paragraph of these remarks, that the division of subjects adopted by Dr. Littell was a natural one. Justice requires that we should give our readers some knowledge of it, before they seek for the Manual, as we counsel them all to do. The following is the order in which the subjects are treated: 1. *Diseases of the Orbit, including Inflammation of the Cellular Tissue, Tumours, and Aneurism by Anastomosis.* 2. *Wounds of the Eye and its Appendages.* 3. *Diseases of the Lachrymal Organs.* 4. *Diseases of the Palpebræ.* 5. *Diseases of the Conjunctiva.*

6. *Diseases of the Cornea.* 7. *Diseases of the Sclerotica.* 8. *Diseases of the Choroid.* 9. *Diseases of the Retina.* 10. *Diseases of the Iris.* 11. *Diseases of the Crystalline and Capsule.* 12. *Diseases of the Humours.* 13. *Diseases of the Globe.* 14. *Malignant Diseases of the Eye; viz. Cancer, Melanosis and Fungus Hamatodes.* 15. *Extirpation of the Eye.* 16. *Neuralgia of the Eye.* 17. *Various States of Defective Vision.* Under the head of diseases of the Crystalline and Capsule comes Cataract, and a description of the different operations for its removal from the axis of vision. Towards the close are formulæ of the ointments, fomentations, eyewaters, powders, rubefacients, and cataplasms used in the topical treatment of diseases of the eye, and a *single* prescription of a combination of articles for internal use. The author will probably deem it advisable, in the next edition, to make these conform more closely with the terminology of the American Pharmacopœia and Dispensatory.

The work is terminated with a vocabulary of eighteen pages, in which the derivation of the names of the different parts of the eye and of those of its diseases, and the meaning attached to each, are given.

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*On the Application of Galvanic Electricity to Medicine.* Read to the Lexington Medical Society, December 2, 1836. By ROBERT PETER, M. D.

THIS is a plain, well-written essay, intended to show the analogies between the actions of electricity and those of nervous power. The author first notices the discovery by Galvani of contractions caused in the muscles of a frog by electricity, and by bringing the nerve and muscle into connexion by means of a clean metal. Volta is next cited as showing the cause of these contractions. Then we read of the experiments by Galvani, since so often repeated, in which motion was communicated to the eyes, ears, tongue, and nostrils, and the mouth made to open, of the head of an animal recently killed. Of late years, curious details have been furnished of the galvanic experiments upon malefactors immediately after their execution.

Among the analogies between nervous and electrical phenomena mentioned by Dr. Peter, are the production of tetanus by galvanic electricity; the exhaustion produced by electricity, similar to that from excessive nervous action. The production of animal heat is mentioned in farther illustration of the resemblance. The power possessed by certain animals of emitting electricity, is of course referred to by the author of the essay. The decomposition of chemical compounds by nervous influence in the body is a kindred phenomenon to that caused by a galvanic current. Wilson Phillip\* is introduced in connexion with one of his experiments, which would seem to show that a section of the eighth pair of nerves prevents the change of food in the stomach constituting digestion.

Cases having a direct pathological and therapeutical application, are noticed on the authority of Humboldt, Miller, (Dr. James H.) of Baltimore, and Harris, (Dr. Thos.) of Philadelphia, in which new sensations and actions were produced by establishing a galvanic current between two remote parts of the body, the surfaces of which were denuded by blisters, as formerly recommended and practised by Dr. Mansford.

This instructive essay of Dr. Peter is we suppose from the *Transylvania Journal of Medicine*. This periodical has not reached us since the commencement of our editorial labours.

\* Dr. Peter has anticipated royal action, and dubbed this gentleman, knight, by calling him Sir Wilson Philip. It was thus was made Sir Benjamin West; although the artist died without the ceremonies of knighthood ever having been performed on him.

## OFFICERS AND STUDENTS OF THE PENNSYLVANIA UNIVERSITY.

We have received from Dr. Short, the dean of the medical faculty, who is also professor of *Materia Medica* and Medical Botany of the Pennsylvania University, a catalogue of the officers and students of that flourishing institution. We learn from this document, that the medical class consists of 243 students, the law class of 56, and the Morrison College of 62; making in all 360 students attending the different departments of the Pennsylvania University.

The trustees are sixteen in number, of whom Robert Wickliffe, Esq. is chairman. The Faculties are as follows:—

Rev. Thomas Winthrop Coit, D. D., President.

*Medical Faculty.*—Benjamin Winslow Dudley, M. D., Professor of Anatomy and Surgery. Charles Caldwell, M. D., Professor of the Institutes and Clinical Practice. John Esten Cooke, M. D., Professor of the Theory and Practice of Medicine. William Hall Richardson, M. D., Professor of Obstetrics and the Diseases of Women and Children. Charles Wilkins Short, M. D., Professor of *Materia Medica* and Medical Botany, and Dean of the Medical Faculty. Lunsford Pitts Yandell, M. D., Professor of Chemistry and Pharmacy. Robert Peter, Librarian of the Medical Library.

*Faculty of Law.*—Hon. Daniel Mayes, Professor of Statute and Common Law. Hon. George Robertson, LL. D. Professor of National and Constitutional Law, and Equitable Jurisprudence. Charles Caldwell, M. D., Professor of Medical Jurisprudence.

*Faculty of Morrison College.*—Rev. Thomas Winthrop Coit, D. D. Morrison Professor of Metaphysics and Moral Philosophy. Benjamin Moore, A. M. Professor of Mathematics and Natural Philosophy. Rev. Samuel V. Marshall, A. M. Professor of the Ancient Languages and Librarian. Robert Peter, M. D., Professor of Chemistry.

*Preparatory Department.*—James Logue, LL. B. Principal and Tutor of Mathematics. Rev. Lyman W. Seeley, Assistant, and Tutor of the Latin and Greek Languages.

## HYGIENE.

### ON THE CAUSES OF COLICA PICTONUM AMONGST THE WORKMEN WHO PREPARE WHITE LEAD. BY A. CHEVALLIER.\*

In a previous number we gave the results of M. Chevallier's careful researches into the diseases to which printers are subject; he has now, with similar industry and skill, investigated the effects of white lead on workmen, with a view to the amelioration of their condition.

Workmen who use lead in any way are liable to contract "the painter's colic;" but M. Chevallier has confined himself to the study of this disease among those employed in manufacturing white lead (*ceruse*) only. For this purpose the following questions were addressed to the manufacturers, chemists, and medical men attached to the manufactories or to the hospitals to which the patients were sent, and the answers contain an analysis of their replies.

1. Are the manufacturers of white lead numerous in France?—About 450.

2. Are women and children employed as well as men?—Women, and children from fourteen to fifteen, are employed.

3. Are the men, the women, or the children most subject to colic?—Some manufacturers say the men: but others, who employ women, affirm that they are most liable from their susceptibility. Dr. Renaudin thinks that, if women are less liable, it is because they are not employed in powdering the white lead. It has been remarked that those of a nervous constitution are most liable to it, and the disease is more severe. Tables kept by physicians attached to manufactories are required to solve this question.

\* We have taken, on this occasion, the abridged translation of the article in the *Annales d'Hygiène*, from the British and Foreign Medical Review, No. IV.

## 4. Does the disease affect all the workmen, or one workman many times?

The answers differ, but they prove: 1. That many workmen pass whole years without an attack; but these are men born in the country, who take much milk, and systematically avoid all excesses. 2. Relapses are frequent, and particularly so if the workman goes back to his work before he has regained his strength. 3. Imprudence and excess, rather than the labour itself, predispose to the disease. 4. Some men work for three years without disease, others are attacked in two or three weeks. Dr. Renaudin says, all are destined to have the disease; M. T. Desplanches says, all have it, because precautions are not taken in the establishments.

5. Does the disease attack the same workmen many times?—Yes; and relapses are most frequent after a violent attack. Those that have had it are most disposed to have it again, and after a second or third seizure should give up the employment. Workmen, however, have been known to have had it five, six, seven, or eight times. M. Dehéque knew an old man who had had it eleven times: he was a clever workman, but lazy, drunken, and in a constant state of brutishness; he trembled, and had lost his beard, eyebrows, and almost all his hair; he seemed always asleep, spoke with difficulty, but worked and lived hard, sleeping well on straw, eating little, drinking much in small quantities; his face was swollen, and his complexion white, soft, and shining.

6th. Is the temperature a predisposing cause of the disease?—At Lille it was remarked that the disease was more violent during intense heat and great cold; and this is confirmed by the admissions into La Charité in 1833; for, during January there were fifteen individuals admitted with this colic, and in July forty-five. At Strasbourg the disease was most frequent in damp winters. M. Fee says that the workmen have observed that those who live in the manufactory are more liable to it than the others; and that those who were obliged to walk some distance into the country to their homes were hardly ever seized.

7th. Are these diseases ever serious or fatal?—1. When suitable precautions are taken the disease is not serious, particularly if the workmen cease to work at the white-lead. 2. It may be more serious if there are complications. 3. After a third or fourth attack, it may produce acute pains in the limbs, and in the end paralysis and incapacity to work. 4. The first or second attacks, when well treated, leave no dangerous sequelæ. 5. Death may ensue if there is negligence on the part of the workman. Dr. Renaudin says on this subject, that "workmen who have had it as many as six times often die, particularly if it reacts on the brain, producing epilepsy, which is rapidly fatal notwithstanding every attention, or the limbs become paralytic: which state is very difficult to cure, and often incurable." Out of 3,569 cases of painter's colic reported by various authors, there are ninety-five deaths, or a mortality of little less than one in thirty; and this is owing to complications or affections of the nervous system.

8th. How long may a workman work in a white-lead establishment?—Those who are regular in their conduct, sober, and use much milk, may work for an indefinite period. Among eighty-two workmen in M. T. Lefebvre's establishment, a great part have worked three, four, five, six, and seven years without suffering from such attacks as incapacitated them. In other places similar observations cannot be made, as the men only work there when there is no employment elsewhere. "There are a number of instances of men working twenty or thirty years where the ceruse is made by the Dutch process." (M. Stollé, of Strasbourg.)

9th. Do the workmen die young?—"Those who are most susceptible of it always die prematurely, and those who have the most power of resistance die before their natural term." (Dr. Renaudin.) "The trade does not seem to influence the length of their life, but they become old and infirm prematurely." (T. Desplanches.)

10th. Are any precautions taken?—Numerous measures have been adopted, and attempts made to combat the carelessness of the workmen, who will not willingly follow the recommendations. The men have been recommended not to touch the oxide of lead unless it is wet, to avoid the emanations from melting lead, and the dust of white leads; to cover their mouths with a wet cloth, and their heads with linen whilst packing the ceruse in barrels; to use great cleanliness, washing their hands and changing their outside garments before eating; to drink milk and beer: when this advice has been taken, the men have been rarely attacked, and spacious shops, ventilated by free currents of air, have diminished the disease.

11th. Are medical men attached to these manufactories?—To some of them

only: in others, the sufferers are immediately sent to an hospital. In Germany and Holland, where ceruse manufactories are very numerous, the government obliges the manufacturers to intrust the health of their workmen to a medical man.

12th. What parts of the process appear to be particularly hurtful?—1. The separation of the layers of oxidized and carbonated lead from that which is not so. 2. The remelting of the fragments of lead. 3. Packing the ceruse in barrels. 4. Sifting the ceruse.

13th. What precautions are or could be taken to render these processes less dangerous?—In some manufactories where the fragments of lead are remelted, there is a lofty ventilating chimney, with a ventilator of sufficient power to expel instantly the noxious vapour; in others the sieves and mills are enclosed in wooden frames, forming partitions separating this part of the workshop from the rest; also, when the barrel of ceruse is moved, it is covered with a sheep's skin. The following plan has been adopted for some years by M. Reboul, of Pézénas:—

The melted lead is poured on plates of copper in thin layers, a foot long and eight inches broad, which are rolled up spirally, so as to be eighteen or twenty lines in diameter: these are placed in a vessel, and distilled vinegar poured over them: they are then withdrawn and exposed to the air: they are next placed in deal boxes, having a grating at the bottom, and seven or eight of these boxes (which are of the same size,) are piled one on the other in a drying place. The base of each pile is a reservoir of stone, or of wood lined with lead, having a waste-pipe passing through the wall. In the middle of the room is a charcoal furnace, over which is placed a copper vessel half filled with water. In the ceiling are holes closed by wooden trap-doors, corresponding in number to the piles of boxes, through which distilled vinegar or vinegar holding lead in solution, is poured in every morning: after this the trap-doors are closed, and during the day smaller quantities are frequently poured in through holes made in the trap-doors, which dropping guttatim from box to box and thence into the reservoir facilitates in its passage the formation of the carbonate of lead. The liquor which has not been absorbed runs out of the reservoir, and is used again. When the lead is almost entirely converted into ceruse, water is poured over it, instead of vinegar, to wash away any vinegar or acetate. The lead, thus changed into ceruse, is thrown into a large tub of water, and agitated with a spatula; the ceruse is thus separated from the non-carbonized lead and particles of oxide, which sink, and is held in suspension by the agitation of the water with which it flows out into other tubs, and subsides. This separates the greatest part of the ceruse: to obtain the rest, the residue is placed in a wooden barrel with some pieces of quartz: water is added, the barrel revolved, and the powders of lead allowed to fall again into the tub. Another washing separates the ceruse, and the grey powder which remains is spread over new rolls of lead which are placed in boxes for the drying stove. The other manipulations relating to grinding and drying it are common to all manufactories. The novelty in the process consists in the arrangement of the boxes and drying stove; in washing the lead with vinegar and solution of acetate, and in two ways, rapidly and slowly; and in the use of the barrel and quartz.

M. Reboul says, in a letter, dated 2d March, 1834, that he has used this plan for fifteen years; during the former part of this period many workmen were attacked by the lead colic, but for the last nine years there has been no case. This is simply owing to avoiding the vapours of the salts of lead and not respiring the air charged with the dust of these salts; two precautions which could be carried into effect in the process he adopts, as the ceruse is prepared in drying stoves, which need not be entered until they are cooled and ventilated; and the ceruse thus prepared being in the state of paste, need not be powdered, but only washed, dried, and packed.

14th. Are any preservatives against lead colic known in the manufactories?—No actual preservative is known, but precautions are taken which render accidents less frequent. In some manufactories, milk, butter, beer, purgatives, water acidulated with sulphuric acid, are given to the workmen; but the best preservative is a glass of water impregnated with sulphuretted hydrogen, taken every night on leaving the workshop: the water of Barèges or of Enghien will answer the same purpose.

15th. What are the precursory signs of the disease?—According to the manufacturers, those who are about to be attacked appear depressed, the face wrinkled, pale and yellow, the eyes hollow; they are low-spirited, and do not eat; there is a yellowish tint round the nose and mouth, the lips tremble and are cold, and there is



constipation. M. Renaudin says, all the workmen are pale whether ill or not, and their teeth of greyish colour approaching that of lead; but the true precursory sign is numbness of the arms and legs, three or four days after which the colic comes on.

Such is a summary of the principal facts obtained by M. Chevallier; and he concludes by giving a series of directions to the manufacturers and workmen, with a view to diminish the disease, and adds a new mode of treatment.

*Advice to Ceruse Manufacturers.* In order to preserve the health of the workmen, it is advisable—1st, to enforce strict cleanliness, and washing the hands before eating and leaving the shop, and to prevent eating in the workshops; 2d, to establish thorough ventilation; 3d, employ means to separate the scales of white lead with as little dust as possible. (For this purpose the proposition of M. D'Arceet, to pass the leaves of lead between a grooved cylinder enclosed in a wooden frame, instead of beating them, may be attended to.) 4th, to isolate the mills and sieves, and to place them in close wooden frames. 5th. That when there is dust of the ceruse in the workshop, the workmen should cover their mouths and noses with a handkerchief slightly moistened. 6th. To provide a medical attendant to examine the workmen frequently. 7th. To acquire those who have any precursory symptoms to leave off work for one or more days, according to the opinion of the medical man. 8th. To oblige the workmen to wear smock-frocks, (*blouses*), and to require them to leave these garments in the workshop, and to have them washed from time to time, and to reason with them on their carelessness, to which the majority of accidents are traced. 9th. To prevent debauchery among the workmen; to employ only sober men, and to discharge those who persist in drinking. 10th. To introduce the plan of drinking daily on leaving work a glass of water charged with sulphuretted hydrogen, to neutralize the effects of the ceruse which might have been absorbed. (This is easily made by passing into water sulphuretted hydrogen gas disengaged from sulphuret of iron by weak sulphuric acid.) 11th. To try means which may probably be preservative that are suggested by the medical man attached to the manufactory. 12th. To use the least dangerous processes.

*Advice to Workmen.* 1. To be sober and abstain from wine and venereal excess. 2. To be extremely clean. 3. To take solid nourishment, and not to eat largely on Sunday and Monday, and then scantily during the rest of the week. 4. To inform their master whenever they feel symptoms of indisposition; such as loss of appetite, or of spirits, numbness in the limbs, &c.

*New Treatment of Diseases produced by Lead.* The liver of sulphur has been proposed since 1777 by Navier, as a counter-poison to lead; but he did not confirm its efficacy by actual experiment, and Orfila having shown its inapplicability, it fell into oblivion. In 1814, M. Chevallier, having convinced himself that sulphuret of lead had no action on dogs, whilst carbonate of lead was injurious, inferred that hydrosulphuric acid might be advantageously employed as a counterpoison to the salts of lead; and four years afterwards, being in a manufactory where two men were attacked with violent lead colic, he gave them about a pint of hydrosulphuretted water, which he found in the laboratory, with immediate relief. He subsequently found similar benefit in his own person. M. Ratier has since confirmed these facts by many trials at the Hospital of La Charité, and gives the following directions. Three indications are to be fulfilled:

1. To neutralize the poison, by giving internally a quantity of hydro-sulphuretted water, proportioned to the known or supposed quantity of the salt or oxide of lead absorbed. M. Rayer has used the "eau d'Enghein," but either of the following artificial preparations may be substituted:

(No. 1.) Take nineteen pints of water, and add one pint of water saturated with sulphuretted hydrogen, in which twelve grains of carbonate of soda had been previously dissolved.

(No. 2.) Dissolve five grains of sulphuret of potash in a pint of water.

The more recent the colic, the more marked the effect. Many obstinate attacks have yielded to this treatment only.

2. To relieve constipation where it exists. For this purpose, M. Rayer prescribes forty-eight grains of scammony and the same quantity of jalap in twelve pills; the patient to take from two to six until they operate. If the constipation continues, a lavement, containing an ounce of senna and two or three ounces of castor-oil.

3. To relieve pain and to procure sleep. For this purpose, one grain or one and a half grain of extract of opium is given at night.

By these means, M. Rayer has rapidly relieved the effects of the salts and oxides of lead, sometimes on the second day, often on the third or fourth, and rarely beyond the sixth. He has never seen a relapse.

M. Lefebvre has communicated by letter the particulars of four cases of colica pictonum in his manufactory, all of which yielded to the sulphuretted hydrogen treatment alone. Half a drachm of sulphuret of potash was dissolved in a pint of water, half of which was taken in two doses each day. Three were cured in two days, and one in one day.

From the injurious effects which white paint made by carbonate of lead has on the healths of painters, as well as occasionally on the inhabitants of recently painted houses, it has been proposed to substitute carbonate of zinc for the lead. From a report of commissioners appointed by the Academy of Architecture in Paris, it appears that the paint made from carbonate of zinc is not unwholesome, and that it preserves its brilliancy and whiteness. At present, however, it is more expensive than carbonate of lead, which would prevent its general adoption; but, as M. Chevallier suggests, it may be very useful in painting the rooms where sulphur-baths are given, or privies where sulphuretted hydrogen is evolved, which blackens white-lead paints.

## PHYSIOLOGY.

### FUNCTIONS OF THE CÆCUM. By DR. SCHULTZ.

(Continued.)

#### CORRESPONDENCE OF THE TIMES FOR EATING WITH THE PERIODS OF DIGESTION.

"The simple rule to eat as often as one is hungry, appears no doubt the most natural. I shall be able, however, to show that this rule is by no means universal, and in many instances even pernicious. I shall succeed best if I prove that one is often hungry without having the least real need of food, and that this hunger is better allayed by fasting than by eating.

"Hunger is the feeling of need of the nourishing parts of the blood, and is situated in that organ through which it is satisfied—the stomach. This appears to be the reason, why, when the stomach is empty, we hunger, and not when it is full, even when it is filled with perfectly indigestible matter, which cannot satisfy the true feeling of hunger. We cannot judge from hunger whether the food be digested, and the proper source of hunger satisfied; and, therefore, this feeling cannot be the only rule for eating, since a perfect and undisturbed digestion is necessary for the true allaying of hunger, and, therefore, when digestion would be disturbed thereby, it would be improper to eat, notwithstanding hunger may be felt.

"If we consider under this point of view the antagonism between the gastric and cæcal digestion, it follows, that, if both be excited at the same time, they will reciprocally disturb each other, and that for perfect digestion, and the proper formation of the blood, they must take place at different periods of time. My experiments show that, for the completion of the cæcal digestion, the bile flows through the small intestine into the cæcum, and the whole intestine becomes thereby more or less alkaline; but they also show, that if, during the cæcal digestion, the stomach be put in action, the flowing of the bile to the cæcum is stopped, and its digestion consequently hindered, since the chyme cannot be neutralized, and all the contents of the canal as far as the excrement become sour. The formation of the blood in the lower parts of the canal is hereby disturbed, and the gastric digestion is also rendered imperfect; so that the two digestions cannot take place in their integrity at one and the same time. The completion, therefore, is indispensably necessary to perfect digestion in general, and it becomes very important so to regulate the periods for eating, that the activity of the stomach may not disturb the digestion in the cæcum.

"If now, the cæcal digestion be considered more particularly as a nocturnal digestion, the meals should be so regulated, that, when this begins, the stomach may no more be put into action, or at least not overfilled. It is generally admitted that a man digests a moderate meal within three or four hours. My experiments, however, upon carnivorous animals, which digest much more quickly than the omnivorous, to which class man belongs, show, that six or seven hours are requisite for the digestion of a moderate meal, and that when dogs are allowed to eat as

much meat as they will, twelve to fourteen hours are hardly sufficient for perfect digestion. The animals must even then be allowed to rest, for if they are made to exert themselves, the digestion is still further delayed, at least half the time longer. The observations which I made upon myself during intermittent fever agree with this fact, and it may safely be assumed, that six hours are necessary for perfect digestion, that is, till all sour chyme has disappeared from the stomach. If now it be admitted, that, in the common mode of life, the nocturnal digestion begins about from seven to eight o'clock in the evening, the last meal ought to be taken so early, that by this time it may be for the most part digested in the stomach. In general, therefore, one should not eat after four o'clock in the afternoon, and evening meals should be altogether avoided: for, in proportion to the lateness of the hour and the quantity eaten in the evening, the more will the cœcal, and therefore also the gastric digestion, be disturbed, seeing that both must take place nearly at the same time.

"That this rule is not so applicable in youth (as long as the gastric digestion resembles that of carnivorous animals, and for the most part finishes the process of digestion alone,) as in riper years, follows from what has been already observed.

"The more the digestion is disturbed by continued large and late evening meals, the less perfect will be the preparation of the blood, and the more will the need of its nourishing parts, or hunger, be felt, particularly in the evening when the stomach is empty. This is the reason why those people who should eat least in the evening are most hungry at this time, and here more particularly does the feeling of hunger not correspond with the period of digestion; for the more such people eat in the evening, the more imperfect is their sanguification, and the greater the consequent hunger, since the food goes almost entirely unchanged through the alimentary canal, and the nourishment it contains is lost to the body. The only means, therefore, by which this hunger may be properly appeased, is that by which the digestion may be restored, and sanguification amended, and that is, notwithstanding hunger, to abstain from food in the evening, that the gastric and cœcal digestions may not reciprocally disturb each other.

"The source of hunger will ever increase, by continually appeasing it by late evening meals, and in this way, therefore, it is as easy to starve from too much eating as from fasting: and no doubt in this way has many a person eaten himself to death, and most probably will still. We find in general that the meagerest and most sickly persons are the greatest eaters, and, on the contrary, the well-nourished and powerful eat less. That in the different conditions of the digestive organs of different people, and according to the quantity of food which is taken during the day, there may be various changes and exceptions to this general rule, is self-evident. Where the youthful condition of the digestive organs is still vigorous, and the cœcum not as yet much developed, it is not necessary to be so particular about the smallness of the evening meals; and where there is in general but little taken during the day, and the quantity of food in the cœcum, therefore, small, more may be eaten in the evening, as there still remains a quantity of bile sufficient for the perfection of the cœcal digestion. The longer the fasting after meals, the more bile can flow into the cœcum after the ending of the gastric digestion, and the less fear need there be of evil consequences."—*London Medical and Surgical Journal*, October 31, 1835.

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The present number of the Library will put our readers in possession of LER's *Observations, &c.*, and of part of another work—*A Therapeutic Arrangement and Syllabus of Materia Medica*, by JAMES JOHNSTONE, M.D., &c., &c. The value of this latter is enhanced to both the writer and lecturer, as well as student, by an annexed posological table, containing about 400 drugs or officinal preparations with their doses. The remaining portion will not occupy more than fifty pages of the fifth No. of the Library. Following it will come CURLING on *Tetanus*, the most complete compend, perhaps, extant, on the pathology and treatment of this dire disease. Room will, it is believed, still be allowed for introducing the greater portion of Dr. MARSHALL's *Practical Observations on Diseases of the Heart, Lungs, Liver, &c., occasioned by Spinal Irritation: With cases.*

# THE ECLECTIC JOURNAL OF MEDICINE.

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*A Treatise on Functional and Organic Diseases of the Uterus.* From the French of F. DUPARCQUE, Docteur en Médecine de la Faculté, et ancien interne des Hopitaux et Hospices civils de Paris, &c. &c. Translated, with Notes, by JOSEPH WARRINGTON, M.D. of Philadelphia. Desilver, Thomas & Co. 253, Market Street, 1837, 8vo. pp. 455.

THE profession is under great obligations to Dr. Warrington, for his having introduced to their notice, and given them facilities for perusing, so admirable a work, both in its systematic arrangement and practical details, as Dr. Duparcque's *Treatise on the Diseases of the Uterus*. In vain will they look in any other work, accessible to them, for a pathology of the alterations of uterine growth and structure, and a curative course inferred from, and consistent with, pathology, such as we find laid down in this volume. The doctrinal propositions are brief, and are constantly illustrated and enforced by the histories of cases, of which Dr. Duparcque relates no fewer than eighty-seven, the majority of which occurred in his own practice.

The unities are not sought for by the author, either in laying down his divisions of the diseases of the uterus or in his therapeutical indications. He does not take the pains very gravely and earnestly to assure us that he has discovered an infallible remedy for any one of its diseases, whether menorrhagia, or dysmenorrhœa, or amenorrhœa, whether simple ulcer or cancer, whether sanguineous engorgement or engorgement with induration. With him, prolapsus does not necessarily call for a pessary; nor leucorrhœa for astringent injections. But, better than all this, he indicates clearly the symptoms of an abnormal condition of the uterus, and the appropriate remedies and treatment. The chief

cause of the diseases of the uterus having been treated so empirically, in this country at least, must be found in the difficulty of establishing a correct pathology. And this again is directly ascribable to our foregoing the means of ascertaining the real state of the organ—its size, hardness or softness, its sensibility to touch, and its probable vascularity and relative situation. We cannot approach nearer than conjecture in these matters, so long as we fail to make an examination of the organ, and to avail of the aids furnished by the touch and sight. False delicacy both on the part of the physician and of the patient has often prevented the necessary investigation, even where diffidence growing out of ignorance has not withheld the former from a discharge of his duty. True delicacy is based upon humanity, and a desire to save another from both bodily and mental suffering. It ought then to prompt a physician to suggest the speediest and safest means of cure, rather than to restrain him from what he believes to be right, because his proposition at the moment may either displease or alarm. Who shall compare the long suffering of body, and the perversion of the better feelings of a female, for years, from uterine disease, to the temporary annoyance to which she would be subjected by an examination *per vaginam*, or even by the use of the speculum.

The *speculum uteri* allows of the sense of sight being brought to the aid of that of touch, in determining the state of the cervix uteri—that part of the organ, be it remembered, in which organic changes, involving deterioration and destruction of tissue, almost invariably begins, and to which they are often exclusively confined. The patient can and of course ought to be entirely covered with suitable clothing; the pelvis and lower limbs, being either enveloped in a sheet or in drawers—leaving just opening enough for the introduction of the speculum into the vagina from without by one hand of the operator; the other hand under the clothes separating the labiæ. The patient should be placed on the side or foot of the bed, lying on her back, and the breech raised with pillows, and the lower limbs bent and separated; the feet either resting on the borders of the bed, or on chairs. If light enough is not admitted through a window, a lamp or candle may be used. An inspection can then be made of the mouth and neck of the uterus, or leeches applied to the latter part, according to the intention of the physician.

In the three chapters which compose the first part of the work before us, Dr. Duparcque gives a rapid sketch of the predisposing and exciting causes of chronic structural alterations of the uterus in general, their mode of formation, and relative curability and the means of detecting them.

The second part of his work is taken up with a special history of chronic alterations of the uterus, under which he includes engorgements properly so called, and extraneous growths, and also cancer. To the head of engorgement belong hypertrophy, or dropsical enlargement, sanguineous engorgement, including simple congestion, hemorrhage with congestion, and acute or chronic phlegmasia. If the term acute be here used under the general title of chronic affections, it is to be understood as a state supervening on some one of these latter. Under engorgement, the author classes chronic metritis, induration, and schirrus, engorgement by cerebriform alteration, by melanosis, and finally by tubercles. He admits three species of ulcerations of the uterus; simple or benign ulcers, phagedenic or corroding ones, and the carcinomatous variety. Lastly, we have a critical examination of the surgical treatment, or that by operation, of the cancerous affections of the uterus in general.

The Treatise of Dr. Duparcque, we should inform our readers, obtained the prize offered by the Royal Medical Society of Bordeaux for the best essay on the following theme:—"To establish the diagnostic characters of different indurations and ulcerations of the neck and body of the uterus: to point out the best mode of treatment for each of them, and to state the cases which require extirpation of the diseased parts." The report of the Commission appointed to examine the three essays sent to them on the occasion, is not only in favour of the production of Dr. Duparcque, but adds, that the part which treats of engorgements of the uterus, is beyond dispute the best arranged and the most complete of any writing on record in which this subject is investigated. The author, continues the Commission, has not only shown himself skillful in explaining the cause and the mode of formation of uterine alterations, but also in curing them.

Cases are related by Dr. Duparcque of chronic diseases of the uterus which occurred in the virgin state, and which began with suppressed or painful menstruation. Bleeding, general and local, warm baths and laxatives, were the remedies by which he succeeded in eventually restoring the patients to health. In one of these (Case IV.) fifteen years of age, the uterus was enlarged, and could be felt behind the pubes, in the hypogastric region, of a size equal to that in a female in the fourteenth week of pregnancy. Finding it difficult to pass his finger into the vagina, the author attempted to introduce it into the rectum, but this latter was so obstructed by hardened feces as to prevent him from making the desired examination. Her pulse was frequent and hard, skin dry and hot, mouth parched, tongue of a deep red. She was bled to the extent of sixteen ounces from the arm; and the feces were extracted from the rectum by a spoon handle. A dose of castor oil was then administered, which though it caused some colicky pains evacuated her lower bowels freely. The abdomen was now yielding, and the tumour which was hard and extended to the left iliac region, could not be felt—and had sunk into the pelvis. The finger of one hand introduced into the rectum whilst the other was applied over the hypogastrium, enabled him this time to be certain that the tumour was an enlarged uterus. "This could not be pregnancy, because the external parts were in such a condition as to prevent ingress. It was not, probably, retained menses from occlusion of the os tincæ, because she had already menstruated. I therefore concluded that this increase of volume of the uterus was occasioned by an engorgement of its tissue, and consisted in an inflammation, which, though chronic at first, had become acute. This idea received some confirmation from the fact of the pain and great sensibility of the uterus under pressure. With this view we (Dr. Godechaux and the author,) had her bled twelve ounces, and next day had twenty leeches applied to the hypogastrium, which was kept constantly covered with emollient cataplasms. She was also directed to use the bath and laxative drinks." The pains from this time rapidly abated; the patient was free from fever and nausea. Five days afterwards twelve leeches were applied and the other remedies continued. She was allowed skimmed milk and light broths, provided she relished them. On the following month the catamenia returned with their usual freedom, and she subsequently enjoyed good health.

The patient in this case had, before the disease came on, regularly menstruated, but violent pains in the hypogastrium preceded the discharge, and disappeared when it was established: it generally continued pretty freely for five

or six days. It was during one of these menstrual periods that she was excessively alarmed by an explosion in an adjoining chamber; she was seized with an icy coldness, followed by violent agitation, intense pains in the abdomen. On the following month the pains returned with greater violence, but they were not followed by the menses. To this state succeeded emaciation, altered colour, and expression of her features, loss of appetite, impossibility to walk or stand without inclining very much forward, and frequent attack of sick stomach. A physician was called in; but Dr. Duparcque, who was afterwards associated with him in consultation, did not see the patient until four months and a half from the time of the exciting cause, as above mentioned, of the disorder. The treatment has been detailed. After giving the history of the next, or fifth case, in which the patient died eighteen months after the cessation of the menses, and with a uterus so enlarged as to have created a belief that she had been long pregnant, but which in fact was discovered to be a morbid growth, weighing with the contained fluids thirty-two and a half pounds, Dr. Duparcque takes occasion to mention the good effects of abstinence from sexual intercourse in married females who had been considered sterile, but who afterwards became mothers—they being also subjected to a mild regimen and to antiphlogistic means.

“When amenorrhœa or dysmenorrhœa depends upon engorgement of the uterus, a circumstance of more frequent occurrence than is generally believed, connubial intercourse, far from being useful in re-establishing the healthy functions of the uterus, increases the derangement; and by the excitement which it produces, maintains the cause of it.”

The sixth case gives rise to many practical observations by the author. He tells us “that commonly, though not always, chronic diseases of the uterus affect the body, or the whole of the organ in virgins—while they ordinarily have their seat, at least primarily, in the neck, with those who have indulged in sexual commerce, and particularly in those women who have conceived. Functional disturbances following abortion result from a chronic inflammatory engorgement of the uterus or of its neck only, which is susceptible of cure.” After mentioning various causes attendant on child birth, which may give rise to congestive or inflammatory engorgement of the uterus, and imprudences afterwards which will in themselves aggravate or produce it, he adds a remark of no small practical moment. “The uterus remaining engorged for a greater or less length of time after accouchement, necessarily acquires an excess of weight which tends to depress it towards the vulva, and to cause prolapsus uteri. This precipitation is favoured by the relaxation of the vagina and ligaments of the uterus, as well as the yielding of the cellular tissue of the pelvis, in consequence of pregnancy and parturition.

“If we regard the displacement merely, and apply a pessary, without previously removing the cause, the foreign body increases the irritation, and occasions extensive alterations. We have very frequently seen this unfortunate mistake, committed by physicians of great celebrity, become the source of serious consequences. (See case 57, &c.) In this condition of the uterus, the indication is to endeavour to effect a revolution of the engorgement. (See cases 48—54.)”

The author denies the correctness of the opinion credited even by some accoucheurs, that pregnancy effectually cures prolapsus of the uterus. “It must

be evident, however, that whilst the disease is occasioned by engorgement, coition will be injurious, and pregnancy impossible."

He is not an advocate of the doctrine of the "critical age" as it has been termed, being the period in which women are peculiarly subject to uterine diseases, and a breaking up of the rhythm of their functions. They may, he admits, at this time, not unfrequently be victims to cancerous and other affections of the organ; but this is merely a coincidence resulting from causes of long anterior operation in the animal economy, and beginning to show their effects irrespective of the presence of a uterine system. Of forty women affected with cancer, the histories of whose cases were carefully noted, and who were between 40 and 50 years of age, in five only was the disease of recent origin, or connected with the critical period. In thirty-three of the number, there had been irregularity in the catamenia since the last confinement, or after an abortion, or from causes of this organic change of remote operation, as had been evinced in dysmenorrhœa, sterility, &c. In two cases the disease seemed to have originated about the epoch of puberty.

Aware, as every practitioner of medicine must be, of the numerous sympathies which the uterus has with the other organs, and of the extreme readiness with which these are brought into play by its disorders, however slight, it would require strong evidence to convince us that great and extensive organic changes may in some individuals exist without any notable alteration in the general health, or complaint of pain or uneasiness. Proof to this effect, however, is furnished in cases 10 and 11, in the work before us.

As it is far from our intention to pretend to give a regular analysis of Dr. Duparcque's work, or to substitute our notice for the volume itself, we shall content ourselves with indicating a few more of the prominent points touched on by the author. Where every page contains instruction—either in clear annunciation of doctrine, or details of a case, it is impossible to give even a fair summary of the whole.

The second chapter is on the formation, development and termination of the diseases of the uterus in general, interspersed with remarks on morbid degeneration in other organs.

Modes of examining the uterus, in order to ascertain its diseases, is the subject of the third chapter. The details on this subject are extremely valuable, more especially to the young and inexperienced practitioner, whose embarrassment when about to proceed to, or in making the requisite examination, is often little short of that of the patient herself. We ascertain directly by the touch, when the finger is introduced into the vagina, the condition of the uterus, and especially of its neck; and indirectly when the finger is introduced into the rectum; or when the hand, palm, or fingers is applied to the hypogastrium, with a moderate pressure. But the rectum and bladder should be emptied before either mode of examination, by the rectum or the vagina, is performed.

Ocular examination, of late years had recourse to, is a very important accession to the means of our acquiring correct notions of the state of the uterus. The speculum is the instrument used for this purpose,—it is of pewter or of glass. The fashion is either that of Recaumer or of Madame Boivin. Care must be taken to have the instrument of a suitable warmth, by its previous immersion in warm water, and to lubricate it with some unctuous matter. "The



larger end of it should be held in the right hand, while with the fingers of the left we separate the labiæ and depress the fourchette,—we then introduce the instrument, at first obliquely, and as soon as it is engaged between the nymphæ we carry it back into the direction of the median line. These precautions are indispensable with the ordinary speculum, to prevent the vulva from being bruised. They are less essential when the speculum is properly guarded." The instrument should be passed very slowly till its inferior opening becomes applied to the neck of the uterus, or embraces it entirely.

The second part of this work, as already mentioned, is devoted to an account of the particular organic alterations of the uterus; and of each form of uterine disease, cases are given, illustrative of their progress and the effects of remedies. Into these details we shall not enter, but shall give, as before, the leading traits of pathology and practice.

Excrescences or fleshy growths of various kinds in the uterus are not uncommon; nor are they always attended with remarkable or noticeable symptoms. This state of organic alteration is sometimes mistaken for cancer, and has unnecessarily prompted to surgical operation, even to the extirpation of the cervix uteri.

*Sanguine engorgements of the uterus* are treated under the three heads of, 1st, engorgements from simple congestion. 2d. Engorgements from congestion, with hæmorrhage. 3d. Inflammatory engorgements. The first kind of engorgement, or that from simple sanguine congestion, is known by the name of *uterine fluxion*, *uterine congestion*, *plethoric state of the uterus*. The symptoms are nearly the same as in metritis, but less severe; with this notable difference, that neither pressure from without, nor the finger introduced into the vagina, causes pain during the intervals of the paroxysm. The normal congestions are at the menstrual epoch and after child-birth. The immediate results of these congestions, when not normal, nor carried off by the menses or lochia, are to increase the weight of the uterus, and thus to displace it. Descent of the uterus by engorgement takes place even in females who have not had children. This state is also opposed to the return or re-establishment of the menstrual discharge, and may become a cause of sterility, which is incorrectly attributed to amenorrhœa. Congestion, if neglected, may pass into chronic inflammation and incurable organic alterations.

The remedies for this state are such as will cause a resolution of the congestion, viz. revulsive bleedings by the lancet, leeches or cups, and by irritants applied more or less remotely from the congested organ; where there is a retention of the natural local discharge, we should bring this on by the hip bath, demulcent drinks, and emollient applications. A nervous or spasmodic condition, associated with this retention, will call for sedatives, &c. Finally, we substitute for the natural evacuation from the organ, that procured by leeches directly applied to its neck.

Congestive engorgement may be kept up by an atonic state of the uterus, which would indicate the employment of tonics, or still better, in the opinion of Dr. Duparcque, by the use of the *secale cornutum*. Cases are given, both from his own practice and from Italian physicians, to show the efficacy of the ergot under such circumstances.

*Congestive engorgement with hæmorrhage*, is a theme on which the author

dwells with much profit to the attentive reader. He animadverts with, we fear, too much cause, on the common empirical course pursued by so many physicians, who see nothing but the hæmorrhage; and who, assuming one of the effects for the disease itself, direct their measures so as to check and arrest the discharge of blood. Some of these, under the idea of inflammatory action, or of morbid fulness of the uterus, will be beneficial; such are venesection and topical bleeding. But the more common notion of hæmorrhage, especially when it is either continued or of frequent recurrence, and has lasted a long time, depending on mere debility and relaxation of the uterine vessels, is fraught with often disastrous consequences. The only means, according to the author, and we believe him to be correct in this view, of our ascertaining the real condition of the uterus, and consequently of prescribing with a knowledge of the evil, is to make an examination *per vaginam*, and on occasions by the aid of the speculum. The several stages of the diseased uterus, of which hæmorrhage is a frequent symptom, are indicated by Dr. Duparcque. This part alone of his work should commend the whole to the professional reader.

The employment of astringents in copious uterine discharges is thus commented on by the author. Most of these medicines seem to limit their constructive action to the inhalent orifices, and scarcely reach even the capillary vessels. They may prevent extravasation of blood and suppress the hæmorrhage; but they are not always efficient in correcting the fluxionary movement. Congestion increases or continues under their use, and the blood no longer being discharged or accumulated in the capillary tissue, there is reaction and inflammation, often more alarming than the previous malady. Astringents therefore should not be employed unless—1st, an undue determination of blood to the uterus has been removed by suitable treatment; 2d, when the congestion and consecutive hæmorrhage are kept up by or associated with an atony of the uterine structure in general, and the capillary circulation is no longer active. Under these circumstances, Dr. Duparcque recommends cold and astringents or styptic applications to the skin by douches and aspersions, or even to the genital organs by injections; internally the decoction of rhatany root, powder or extract of nut galls, alum, the mineral acids, preparations of iron or chalybeate waters. He places, however, most confidence in ergot, believing it to exert an astringent action on the exhalant and capillary system, and thus to promote the contraction of the uterine tissues, and to force back the engorged fluids into the current of the circulation, to restore the organ to its normal state, and to give it time to resist a return of disease. A case is given of sanguine hæmorrhagic action passing to the inflammatory state by the intemperate use of astringents, and of recovery under a more rational treatment. The good effects of the ergot are illustrated in several cases introduced in this chapter.

*Inflammatory engorgements of the uterus, or metritis, or hysteritis.*—Inflammation or red phlegmasia of the uterus is next taken up by the author, who confines himself to an investigation of the inflamed body, or parenchyma proper of the uterus, to the exclusion of what takes place in its serous or investing, and mucous or lining membrane. The causes and symptoms of metritis need not detain us here. The neck is the chief seat of the inflammation. The treatment recommended is general bleeding, leeches to the vulva, or to the inguinal or hypogastric region, or the anus; cups to the abdomen, loins, hypogastrium, or

thighs. We have found cups applied over the sacrum and adjoining ilia of marked benefit. The hypogastrium should also be covered by emollient poultices and bland or mucilaginous injections thrown into the vagina—the rectum to be emptied also by enemata. Entire rest, rigid abstinence, cooling drinks rendered from time to time diuretic or laxative, should also be insisted on. Counter-irritation of remote parts is a useful curative means. Under the head of revulsions proper, may be mentioned suction of the nipples in cases of recent delivery; and if this cannot be done cups applied to the mammae are serviceable.

The above treatment, carried to the full extent by a use, in due succession, of the remedies mentioned, and a repetition of some of them, may still fail to remove the disease. Sympathetic inflammatory action is perhaps abated, and the blood-vessel system brought to its lowest degree of action, but a congestion of the uterus similar to the hepatisation of the lungs persists. The means found so serviceable in this latter disease have been used with success in this, and are accordingly recommended by Dr. Duparcque. The first of these is tartar emetic; but in the form of ointment rubbed into the skin of the inner sides of the limbs, and on the sides of the trunk. One drachm of tartar emetic to an ounce of lard is the proportion. About two drachms were used for each friction, and in one case an ounce of the tartar emetic was consumed. The second is by the application of leeches directly to the *cervix uteri*. They are applied through the speculum—their bites produce little pain. Twelve is the greatest number used, by the author in this way; and six or eight are generally sufficient for the purpose. Directions are detailed for their mode of application, p. 230–3.

The section on *hard engorgements of the uterus* is written with considerable fulness of description, and contains several important maxims for the guidance of the practitioner. After an account of the anatomical characters, diagnosis, form, consistence, colour, sensibility, is a notice of the causes and accidental or occasional accompaniments of this state of uterine alteration. Of the last are descent of the organ, pain and disturbances of functions, uterine and vaginal discharges. The progress, duration, termination and prognosis of hard engorgement are also exhibited.

When speaking of descent of the uterus, the author says—"a pessary is applied, and surprise is felt that it cannot be supported; or that, far from causing the distress, and the varying pains which have been attributed to displacement, to cease, the presence of the instrument exasperates them, or becomes the determining cause of graver alterations and cancerous ulcers, of which we find many examples reported by authors."

This language is strong; and perhaps does not render entire justice to the practice of using a pessary; but it has, we fear, too much foundation in fact. Position and repose, the author continues, always suffice to cause this infirmity to disappear; and the resolution of the engorgement alone can radically cure it.

Under the head of disturbance of function, we are told, that dysmenorrhœa is distinctive of hard engorgements, and habitual discharges, the ordinary result of sanguine or congestive engorgements, that touching the uterus *per vaginam*, which, in the latter, constantly excites a flow of blood, scarcely ever produces a similar effect on the hard engorgements. Vomiting, when it occurs at the same time with dysmenorrhœa, becomes an almost certain sign of hard engorgement

of the uterus. And again, disordered menstruation, whatever it may be, rarely constitutes an essential pathological condition, but is most frequently but one of the evidences or the result of organic alterations of the uterus.

The first indication for the cure of hard engorgements is, to remove from the diseased organ the material elements of the alteration. This is to be done by abstracting from the general circulating mass, by general and local blood-letting and by leeches to the part itself, by the use of diluents, digitalis, nitre, absolute rest of particularly the diseased organ, by derivative bleeding, cutaneous frictions, hot baths, sinapiams, &c. Fasting is also mentioned, and then stimulants to the secretions, such as emetics, purgatives, diuretics, &c. Finally, the substances which are supposed to act chemically in the blood may be used; such as potassa and its saponaceous compounds.

The second indication is to modify the innervation. As illustrative of nervous influence in these circumstances, the author gives the case of a lady, who had suffered for some time from a cancer, which had excavated her left breast. Various remedies had been used, but without the effect of retarding the disease. An attack of apoplexy, followed by hemiplegia of the left side, sufficed, however, to bring about a complete cure. On recovering the use of her limbs and speech, she inquired of her physician (Doctor Duparcque) whether, during the attack, he had carried off the disease from her breast. *The cancer had in fact completely disappeared*—swelling, ulceration, and discharge were no longer present.

This remarkable fact leads the author to the novel conclusion, that the narcotics—*cicuta*, and kindred drugs, alleviate and cure cancer not by any specific action on the diseased part, or in producing absorption, but by bringing the excessive innervation down to its healthy standard, so as to allow normal absorption to go on and arrest the morbid secreting action.

Simple medicines, or those whose effects are commonly regarded as very slight, often produce, says Dr. D., a marked soothing influence on the system. He has rarely seen the wakefulness caused by pain from a diseased uterus, resist an emulsion composed solely of the distilled water of lettuce, of poppy, some almonds and simple syrup, or syrup of white poppies.

A case of intermittent neuralgia of the uterus, treated unsuccessfully by antiphlogistics, is introduced by Dr. D., to show its successful termination under the use of sulphate of quinine. Another analogous case was cured by one hundred and fifteen of Meglin's pills, composed of the extract of black henbane, extract of valerian, and oxide of zinc, one grain each. Three was the least, and ten the largest number taken in the course of a day.

In speaking of the regimen to be followed in the hard engorgements of the uterus, and especially those of a schirrous character, the author states, and explains the operation of abstinence in resolving these organic alterations. The exclusive use, he says, of *cicuta*, aconite, and others of the class of reputed resolvents, have rarely produced those marked results which have been recorded of them, when rigid abstinence, or the *cura famis*, has not been part of the treatment. The explanation is easy. By hunger, the absorbents are powerfully stimulated to take up the matter deposited in the tissues, and carry it into the circulation, whence it is eliminated by the various emunctories.

The author, however, very properly tells us: In all cases of chronic affec-

tions, it is not expedient to subject the patient to a rigid regimen. It must be done gradually, and be continued in proportion to the general state of strength, to the habits of the patient, and to the degree of intensity or tenacity of the alteration.

The nutriment, he continues, should be of the mildest character, such as not to excite the organs, and at the same time the least bulky and the most easy of digestion. He prefers a milk diet; but where this does not agree with the patient, he allows of light animal or vegetable broths, cooked or crude fruit, &c. He enjoins rigorous abstinence from all fermented, alcoholic, spirituous, or aromatic drinks.

Enemata, and injections *per vaginam*, are specified among the curative means to be employed. Their nature and composition will depend upon the stage of the disease and the sensibility of the uterus.

The hip bath of a moderate temperature, so as not to maintain an afflux of blood in the pelvic region, is preferred to general bathing.

Mention is made by Dr. D. on the indurated enlargement of the uterus, of the use of *mercury* and *iodine*. The latter acts, he thinks, in the same way as the *cura famia*, by producing absorption. Care should be taken to stop its use when, as generally happens after a while, it irritates the digestive organs. This effect, subsided and removed, the use of the article may, if necessary, be resumed.

Of *arsenic*, he says: the advantages which have been derived from its use in the treatment of schirrous affections are so uncertain, that they are far from compensating for the serious accidents which it is liable to produce.

The use of tartar emetic by inunction, is spoken of favourably by the author in this disease, as well as in chronic metritis.

Details of twenty cases of hard engorgements of the uterus, follow the specification of therapeutical means, and tend singularly to enlighten us respecting this form of uterine disease. In these, leeches to the neck of the organ and antimonial frictions, with the antiphlogistic treatment generally, are most frequently mentioned.

*Tubercles, cerebriform enlargement, and melanic productions*, are briefly noticed.

Chapter second is on *ulcerations* of the uterus, which are divided by the author into 1. simple; 2. chancreous; 3. carcinomatous; and 4. cancerous ulcers.

The first kind has been cured by bathing and repose; the female, if married, living *absque marito*. The second by alterative syrups and corrosive sublimate; the last sometimes introduced into the system by rubbing an aqueous solution on the skin.

Chapter third is on confirmed cancer of the uterus. The divisions of this formidable disease, by Dr. Duparcque, are numerous and nice. We have not room to repeat them here. The relative facility of preventions of cancer is properly insisted on here, by showing that the antecedent disease may be cured.

The fourth, and last chapter is on the surgical treatment of engorged and ulcerated uterus. Dr. Duparcque intimates more than once, in his work, that some cases of extirpation of the cervix uteri are evidences of the eagerness of the surgeon, perhaps of his dexterity, to perform the operation, rather than of the actual necessity of the case, or of his pathological knowledge. Where the disease has

been really a cancer, he thinks that the lapse of a rather longer period than surgeons allow when they report their cures, would show a different result.

In conclusion, we believe that our readers who shall have perused the foregoing analysis of Dr. Duparcque's work, to which, by the by, we do not pretend to have done full justice, will be disposed to join us in our initiatory commendation; and still more to study it at their leisure.

Dr. Warrington has discharged his duty of translator with commendable fidelity and average success. He, only, who has been engaged in a similar task can well appreciate the difficulties and toilsome nature of translation. No love or enthusiasm for the author, or his subject, can sustain a person, whilst he is thus slowly repeating another's ideas, in his own language, or as near his own, as different idiom and even modes of thoughts will allow. The translator can have none of the warmth, animation, or passion which carries along an original writer, and which make even weariness, languor, and almost faintness itself a positive pleasure, from the reminiscences of the intellectual exertion, and it may be of the strife which preceded it. The translation of the present work, though somewhat periphrastic, conveys in the main, the ideas of the author with sufficient clearness for his meaning to be readily understood by the reader. If an obscure passage, such as that in the beginning of page 49, or gallicisms, such as *profound* alterations, *proper* consistence, *constrains* (presses on) them, severe *contradiction*, *soft* constitution, *presumption* for supposition, *struck* with gangrene, be pointed out, they are small blemishes in a large volume.\* Sundry errors of typography might also be noticed; but by none of them, we believe, is the meaning affected. It would have been better if the degrees of Reaumur's thermometer had been given in the corresponding ones of Fahrenheit's scale, as that with which the American physician, and we may add general reader, is best acquainted.

The notes to the text, added by the translator, are neither numerous, nor long, nor misplaced. We wish very cordially, that the success of this, his first undertaking of the kind, may be such as to induce him to look around and give us an English version of another of the many good monographs which enrich French medicine and surgery.

\* Dr. Warrington has, on occasions, retained unnecessarily French words, and introduced Frenchified ones, to express a meaning readily conveyed by his own vernacular. Of the former, are *charpie*, *role*; of the latter, *accouchment* and *accouched*. In conversation, and sometimes in writing, the word *accouchment* is used as French; but it has not been properly Anglicised; and still less can we receive a verb to *accouch*. *Foci* does not convey the meaning of *foyers*. The substantive *schirrus* is often confounded with the adjective *schirrous*, as *fungus* is with *fungous*. The translator frequently does himself injustice by faulty punctuation. This is no easy matter to avoid, by a person unaccustomed to correcting proofs, and conducting a work through the press.

*Lectures on the Nervous System and its Diseases.* By MARSHALL HALL, M. D., F. R. S. L. & E., Lecturer on the Theory and Practice of Medicine, &c. &c. Philadelphia: E. L. Carey & A. Hart, 1837, pp. 240, 8vo.

THESE lectures, by Dr. Marshall Hall, may be regarded under two aspects; either as evidences of original observation and discovery, or a sketch of various diseases, respecting which, from the very obscurity of some of them, a physician must feel a lively interest. If the work be presented to us under the first of those aspects, we cannot help denying the justice of the author's claims;—if, under the latter, it should be well received, as much, perhaps, for what it promises, as for what it realizes. The nervous system is made, by the author, to serve very much the same office as the letters of the alphabet in a common-place book. His *apropos* are often forced, and matters are often pressed by him under a common head, which have as little real and pathological connexion as could be found among the several articles noted down under a particular letter. It would seem as if he reasoned after this fashion:—Every organ is supplied with nerves; and in its disorders acts on the common nervous centres: therefore, every malady of any intensity is so far nervous, and may be included under the head of “Diseases of the Nervous System.”

Under what Dr. Hall calls the Anatomy of the Nervous System, he mentions the common divisions into cerebro-spinal and sympathetic.—To these two subdivisions of the nervous system, a third must, he believes, be added, before our views of this latter can be considered as at all complete. It is one which he claims the merit of first pointing out in all its fulness.—“It consists of the *true* spinal marrow, distinguished from the sentient and motor nerves which run along its course, as an *axis of excitor* and *motor* nerves. It is the seat of a peculiar series of physiological phenomena, and a peculiar class of pathological affections.” The surprise of the *Bourgeois Gentilhomme*, when he was told that he had been speaking prose all his life, was not greater than ours at discovering that we had both learned and taught, for now a goodly period, these original views of Dr. Hall; in fact, long before he had written, experimented or lectured on the nervous system; and in entire innocence on our part of any claim to discovery, or belief in their originality. We suspect that Dr. Hall, like all late learners of any branch of science, has mistaken what is new to him for what he thinks is really novel to the profession at large. An illusion of this kind is the more readily indulged in, if a different phraseology or terminology from that in common use be introduced. The discovery is then supposed to be complete; and the very embarrassments which others feel, from their being unable to attach a definite meaning to the new terms, is construed, by the vanity of their author, into evidence of his claims. In the present instance, however, the mystification is soon dispelled by the reader of these ‘Lectures’ substituting *senitive* for *excitor*, and taking in good part the familiar illustrations introduced by the author to enforce his (the common) views of functions.

Dr. Hall properly enough objects to the common division of the nervous system into the *cerebro-spinal* and the *ganglionic* or *sympathetic*, and proposes in its

stead, 1. the cerebral, or the sentient and voluntary, 2. the true spinal, or the excito-motory; and 3, the ganglionic, or the nutrient, the secretory, &c. He thinks, also, that there is good reason for viewing the fifth and the posterior spinal nerves as constituting an external ganglionic system, for the nutrition, &c. of the external organs; so that he "would further propose to subdivide the ganglionic subdivision of the nervous system into 1. the *internal*, comprising the sympathetic and the pneumo-gastric, and 2. the *external*, comprising the fifth and the posterior spinal.

We coincide with him in the propriety of his first division of the nervous system into cerebral, spinal, and ganglionic, as the one which we have for some years adopted in our lectures on the subject, but in a different physiological sense from that understood by Dr. Hall. The cerebral or encephalic we confine to the hemispheres of the cerebrum and cerebellum, and their great commissures, the corpus callosum, and pons varolii, the functions of which are the acts of the various faculties of the mind. The spinal, with us, represents not only the medulla spinalis, but the medulla oblongata and corpora quadrigemina, with a small portion of the base of the brain contiguous. This is the axis of all the nerves, and, together with the nerves themselves, has the properties of sensibility and motility, which are however only regular and complete in their functions when regulated or governed by the active state of the cerebral portion, which implies sensation with perception, and motion with volition. The ganglionic or sympathetic presides over the movements and acts of nutrition, but not exclusively; since the inhalation and expulsion of air, and the ingestion of and excretion of what is effete after digestion, are processes gone through mainly by the instrumentality of the spinal division.

Dr. Hall, under the title of the Cerebral or Sentient and Voluntary System, includes I. The *membranes*, 1. of the summit, 2. of the base. II. The *cerebrum* and its principal divisions. III. The *cerebral nerves*, including 1. the sentient, viz. the first or olfactory; the second, or optic; the fifth, or trifacial; the eighth, or auditory; \* the ninth, the glosso-pharyngeal or gustatory, and the posterior spinal; and 2. the voluntary, viz.: the third or oculo-motory; the minor portion of the fifth, or masticatory; the twelfth, or myo-glossal; the anterior spinal, in their course within the cranium and without the cranium, and in their course within the spine usually viewed as the *spinal marrow*, and in their course without the spine. IV. The cerebellum and its lobes, the middle and the lateral ones.

The second, or spinal, the favourite division of the author, that in which he delights, on account of his fancied discoveries in it, may, he thinks, be distinguished into the *excitor* and *motory*, as those of the former were distinguished into sentient and voluntary. We would ask, what, according to his views and phraseology, are the sentient nerves of the cerebral division, if they are not excitors; and what are the voluntary, if not motors:—and, in the spinal division, are not his excitors sensitive and his motors voluntary, in the entire and healthy state of the animal. Sensation in both divisions may precede motion; in both, the latter may be voluntary without sensation, and in both be involuntary (in disease) from excess of sensation.

\* In his enumeration, Dr. Hall follows Arnold.



His explanation of the course of the two sets of nerves of the spinal division, is, in as far as regards anatomy, incorrect, at least arbitrary;—when he tells us that “the first, or excitor nerves, pursue their course principally from *internal* surfaces, characterised by peculiar excitabilities, to the true medulla oblongata and spinalis; the second, or the motor, nerves pursue a reflex course from the medulla to muscles having peculiar actions, concerned principally in ingestion and egestion. The motions connected with the former, or cerebral subdivision, are sometimes, nay frequently, *spontaneous*; those connected with the true spinal are, I believe, *always excited*.” In presenting the parts of the true spinal, or excito-motory, he mentions the tubercula quadrigemina, the medulla oblongata, and medulla spinalis, with its several portions,—cervical, dorsal, lumbar, and sacral; the true spinal nerves including, the excitors, viz. the fifth or trifacial, the pneumo-gastric and the posterior spinal nerves. 2. The reflex or motor branches, including the seventh, (portia dura) the fourth, sixth, the tenth, or pneumogasttric, (the superior and inferior laryngeals,) the spinal accessory, the phrenic, the inferior external respiratory, and the spinal nerves to the general muscular system.

Touching the physiology of the nervous system, Dr. Hall announces with due pomp such familiar truths as the following:—Respiration is in fact a mixed function, as all the acts of the excito-motory system may be. It is clearly proved that the influence of the stimulus is carried along an excitor and incident nerve to the medulla oblongata or medulla spinalis, and that it is reflected thence along other reflex or motor nerves. The incident excitor nerves, the medulla and the reflex motor, constitute the system. They remain after the centre of the cerebral system has been removed by experiment or destroyed by disease. He tells us, apropos, of the touch of a straw on the eyelash or cornea of a horse (which had been rendered insensible by a blow of a poleaxe on the head), causing immediately forcible contractions of the orbicularis palpebræ and the abducens oculi: There can be no doubt that a filament of the first branch of the fifth pair, or trifacial, conveyed the impression to the medulla oblongata; and that a filament of the seventh pair, or facial, reconveyed it from the medulla oblongata to the orbicularis, or the abducens nerve, to the abducens muscle to the eye.

We see no objection to the lecturer telling his students the above particulars, but gravely to *publish* them, with the added remark—“All this is wonderful, and I believe, hitherto quite unknown to physiologists,” is too severe a tax on the credulity of a reader of common knowledge of physiology. Either Dr. Hall is a late learner, or the London schools are deplorably deficient in an elementary knowledge of the functions of the nervous system, Sir Charles Bell can best tell which of the two suppositions is correct.

After detailing some experiments on a turtle by decapitating it and removing its brain, and destroying its spinal marrow, the author sums up as follows:—“This experiment affords evidence of many important facts in physiology.—It proves that the presence of the medulla oblongata and spinalis is necessary to the contractile function of the eyelids, the sub-maxillary textures, the larynx, the sphincters, the limbs, the sac, on the application of stimuli to the cutaneous surface or mucous membranes. It proves the excited reflex character of this property of the medulla oblongata and spinalis. It proves that the tone of the limbs, and the contractile property of the sphincter, depend upon the same function of the medulla spinalis—effects not hitherto suspected by physiologists.”

Divested of the excito-motory language, and reflex ideas with which the author mystifies us, and done into plain English, as the translators used to say, the preceding paragraph simply affirms that which every student of physiology who has attended to this department of the nervous system must know, viz.: the sensation and motion of the face, trunk and limbs, and these parts of the mucous tissues not supplied exclusively by the sympathetic, depend upon nerves whose axis of union is the medulla oblongata, and medulla spinalis,—and they are lost by a destruction of these latter. Flexion and extension of the limbs and muscular movement in general, depend on the medulla spinalis, and only require the brain or volition to move them in a certain co-ordination and sequence. Animals born without brains, and animals whose brains have been destroyed by experiment, have illustrated this truth, and rendered it familiar to physiologists long before Dr. Hall bethought himself of inventing terms as substitutes for discoveries.

It hardly required his experimenting on frogs to reach the conclusion, that the extreme filaments of the excitor nerves are more impressible by stimuli, than the same nerves in their course. We thought it was one of the most familiar propositions in physiology;—that nerves only display their peculiar sensibilities at their filamentous or expanded membranous extremities.

Another of Dr. Hall's discoveries is, that the fifth pair is not only sentient, or excitor, but also nutrient; and instances in proof, atrophy, the loss of the eye by compression or destruction of this nerve. Serres and Magendie had enlightened us on this point some years ago.

Of inaccuracy of definition and thought, the following is an example. "Apoplexy and hydrocephalus destroy the patient by destroying the cerebral functions merely." Now, it must be known that there may be abolition of the cerebral functions properly so called in coma, and catalepsy, and idiocy, and in chronic hydrocephalus, and in dementia or fatuity, without death resulting. The author does not take into account the disturbances in circulation and respiration, through the shock and violence done to the other parts of the nervous system by the injury of the brain, in the two diseases of which he speaks.

The Lecture, from which we made the extract just commented on, is on the Pathology of the Nervous System. Following some preliminary flourishes, is this notable announcement. "I believe that the *whole* order of spasmodic and convulsive diseases belongs to this, the excito-motory division of the nervous system; and that they cannot be understood without a previous accurate knowledge of this system!" Prodigious discovery! That diseases consisting in irregular and morbid sensation and motion of parts should belong to that division of the nervous system on which their motion and sensation primarily and constantly depend. And still more! That the morbid deviations cannot be understood without an accurate knowledge of the healthy state and function of this division.

The better to strengthen so exceedingly novel a position, Dr. Hall introduces a few terms of new application, such as *centric* and *eccentric*; the first to designate the series of diseases of the kind just mentioned, which have their origin in the spinal marrow itself; the latter such as have their source in the excitor (sensitive) nerves. The subsequent remark, intended to show the vast importance of this division, is about as novel as this latter itself. "You have two little patients with croup-like, or other, convulsions; one of these cases may arise from disease

within the cranium or spinal canal; it will most probably prove incurable: the other may arise from dentition, a cause acting upon an excitor branch of the fifth; I need scarcely add, that it will generally yield to the prompt and energetic use of the appropriate remedies." Will these familiar propositions be aught strengthened or better retained in our memories by the words *centric* and *eccentric*?

In the two or three pages in "The *Therapeutics* of the Nervous System," we see nothing worthy of note. The question asked, may not counter irritation be applied more extensively along the spine than hitherto? might be answered by saying, that the well-read and experienced practitioner does not, at this day, forget such means of acting on the nervous and general system, in diseases marked by abnormal states of sensation or motion, or of sensation and motion.

"Congenital States of the Nervous System, Asphyxia, its Remedies, &c.," are the subjects of a Lecture. The student curious in details respecting the matters first treated of, will peruse it with advantage, provided he can read French; for of the ten pages, there are rather more than three, in five separate extracts, in this language. In other parts of the volume, there is the like prodigality of French quotations, not thrown into notes, nor following or preceding a paraphrase in the author's own language, but forming a part of the narrative and proof by experiments, of important questions in pathology. Whether the Doctor's knowledge of French, like his acquisitions in physiology, be so recent that he supposes the first is as new as he believes the latter are extraordinary, we cannot say. It might be alleged, on the other hand, that, as an atonement for the emphatic enunciation of common truths in English, he disguises, under the garb of a foreign language, whatever should perchance wear an air of novelty. Satiety in the former case is thus corrected by the difficulty with some, and impossibility with others of enjoying, at all, the latter.

It is worse than bad taste for a teacher of any department of science to introduce frequent quotations from a foreign language, the effect of which must necessarily be to obscure his subject; or, at the least, to cause hesitation and embarrassment in following the train of thought or demonstration, on the part of his auditors or readers, as the case may be. For any useful purpose of instruction, Dr. Hall might just as well have recited to his students the words of a Russian song, as to have read to them the numerous passages in French, with which his lectures are garnished. In saying this, we do not suppose them to be ignorant of the language; but any person who is conversant with it, knows the difficulty which an unpractised ear experiences in an attempt to follow a speaker in a strange tongue, even when the latter is his vernacular.

With the drawback of certain favourite terms needlessly introduced, the lecture on *Encephalitis*, *Tuberculous Hydrocephalus* and *Hydrocephaloid Diseases*, contains several useful hints and suggestions touching their pathology and treatment. The differences between encephalitis and tuberculous hydrocephalus on the one hand, and hydrocephaloid diseases on the other, are mentioned in terms of great stress by the author, who, of course, claims for himself a full share of credit for originality in showing that the latter depend principally upon exhaustion. "This exhaustion has its origin in early infancy, chiefly in diarrhoea or catharsis; in the latter periods of infancy, in the loss of blood, with or without the relaxed or evacuated condition of the bowels."

They, on this side of the Atlantic, who are familiar with the symptoms and

progress of cholera infantum, must frequently have seen this form of hydrocephalus in the last stage of the disease, or that preceding dissolution. Here it is an accompaniment of exhaustion, and it follows diarrhœa and vomiting; but it is not so clear that the serous effusion was the *consequence* of exhaustion. The same kind of irritation which persists in the alimentary canal, and gives rise to these exhausting muco-serous discharges, affects, we can readily suppose, the membranes of the brain, and terminates in effusion. Whilst, therefore, we may, with the author, believe that in infantile subjects of a particular constitution, there is danger from the free use of depleting remedies, we cannot go so far as he does in referring effusion in the brain to exhaustion; and forego, as in cholera infantum for instance, sanguineous depletion, and other analogous therapeutical means. The frequency of cases of effusion will, we believe, generally be found to be in proportion to the duration of the case, and the protracted irritation to which the little sufferer has been subjected from the disease.

Without using the name, many of the remarks of Dr. Hall, in this lecture, apply to the phenomena of cholera infantum. His advice is more especially directed to the relief of that stage in which there is torpor of the nervous system and general exhaustion. In order to check the diarrhœa, he counsels us to give the tinctura opii, and chalk; and afterwards, the pilula hydrargyri, rhubarb and magnesia; and to restore and sustain the patient, sal volatile, but especially brandy and proper nourishment. Were not the advice to give brandy, qualified and explained in a subsequent sentence, we should regard it, thus nakedly advanced, as decidedly pernicious.—“Five or ten drops of the sal volatile may be given every three or four hours; and twice or thrice in the interval, five or ten drops of brandy may be given in arrow root done in water. As the diarrhœa and the appearances of exhaustion subside, these remedies are to be subtracted, the bowels are to be watched and regulated, and the strength is to be continually sustained by the nurse’s or ass’s milk.—The brandy has sometimes appeared to induce pain; sal volatile is then to be substituted for it; a dose of magnesia has also appeared to do good.” Dr. Hall had previously remarked that, “in this, as in so many cases of infantile disorders, a young and healthy nurse is the remedy of most importance; in the absence of which, ass’s milk may be tried, but certainly not with the same confident hope of benefit.”

For the state of irritability, he praises the warm bath as a remedy of great efficacy: and for the coma a small blister, or sinapism, should be applied to the nape of the neck. “In every case, the extremities are to be kept warm by flannel, and the circulation should be promoted by assiduous frictions. It is of the utmost importance carefully to avoid putting the little patient into the erect posture. A free current of air is also a restorative of the greatest efficacy.”

“On the Convulsive Diseases of Infants,” in Lecture V., the author discourses to some purpose. Underwood, Clarke, (Dr. John) and Merriman, are referred to and quoted on the occasion. But the larger portion of the lecture is a critique on Dr. Ley’s Views of the Pathology and Treatment of Croup. This last writer supposes that the disease just mentioned, is caused, and its returns kept up, by pressure of enlarged glands on the pneumo-gastric nerve. We agree with Dr. Hall, in regarding this position as untenable. The great predominance of speculation over facts and practical details in Dr. Ley’s book, has prevented

us from giving insertion to any one of the reviews of it, in the English journals on our table.

Dr. Hall unfortunately masks what is really important on many occasions, by uncalled for phraseology; as when he says; "I propose to devote this lecture to the consideration of the cures of convulsion, from causes acting on the course of the excitor nerves, and, consequently, in parts *eccentric* from the brain and spinal marrow. These causes are principally, 1. *Dental irritation*, acting through the *fifth*. 2. *Gastric irritation*, acting through the *pneumo-gastric*, and 3. *Intestinal irritation*, acting through the *spinal nerves*."

An old fashioned lecturer would, perhaps, have been content to tell his students that infantile convulsions commonly arise from two sources:—teething and indigestion, which last includes intestinal disorder. If he supposed them to be ignorant of anatomy and elementary physiology, he might also add, in the way of explanation, but not of assumed discovery, that the irritation of the gums in teething, was transmitted to the medulla oblongata and brain, through the fifth pair; that gastric disorder, from undigested common food or crude fruits, &c., affected the same central organs through the pneumo-gastric, and finally, that the irritation of the intestines, notably the lower ones, as from worms, reached the brain through the sensitive division of the spinal nerves distributed to them. He could also very well detail the symptoms of the convulsions of children and their origin from, and connexion with, the nervous system, without making use of the terms excitor, excito-motory, and eccentric.—Nay, more, availing himself of the current knowledge of this system, his explanations might be more lucid than Dr. Hall's, even though made in entire ignorance of this gentleman's alleged discoveries.

Apart from these objections, this lecture will repay an attentive perusal. We might indeed, had policy or personal feeling demanded, in imitation of a London editor, have copied the greater part of it, in place of offering any criticism on the work, and thus have evaded the general question. The latter part of the lecture is on the *paralysis from dental irritation*, and on another variety of paralysis constituting partial hemiplegia.

"The Nervous System and its Diseases in Adult Age," is the subject of the sixth lecture. The diagnostic and prognostic signs are, many of them, well set forth by the author, with here and there a useful practical hint. The concluding paragraph is worth being repeated.

"I must, in this place, recall to your recollection the important remark made § 227.—The sudden attacks of encephalitis, or it may be pleuritis, or peritonitis, after scarlatina or rubeola, is fatal, unless it be promptly met by blood-letting, in the erect position, to syncope; in effecting which an extraordinary quantity of blood is withdrawn. I owe much that I know of this affection to my friend Dr. Heming."

In another part of the lecture, we are very properly told, that in encephalitis, "from insensibility, the patient does not void the bladder; this viscus becomes extremely distended, and there may be a stillicidium urinæ. In every case of insensibility, in every case of involuntary discharges of urine, examine the hypo-gastric region!

"There is another particular fact, of much importance, to which I must draw your attention: not only the dawn and the course of encephalitis are insidious,

but its termination is particularly so. In some cases an unexpected state of *sinking* takes place, in which the symptoms, whether pain or delirium, &c. subside, and the patient is thought to be convalescent.—The same event occurs in some other diseases, especially enteritis.—Beware of this fact too, and suspect some such insidious change, unless all the symptoms concur to denote returning health.”

For further information upon the important subject of morbid appearances left by encephalitis, the author refers, “with great satisfaction, to the works of M. Andral and Dr. Abercrombie.”

The treatment of encephalitis is stated with brevity and distinctness.—It is in such passages that we see the merits of Dr. Hall as a teacher of medicine. They efface the unfavourable impressions produced by his physiological pretensions, and prompt us to recommend this work, with all its blemishes, to the student and younger practitioner, who will find in it many useful hints, as well as clear and accurate directions for the treatment of some of the chief diseases of the nervous system.

Great stress is laid by the author on the importance of prompt and effectual abstraction of blood from the patient in a perfectly upright position, to the extent of causing incipient syncope. “In this manner alone can we adapt the remedy to the nature and violence of the disease, and the strength of the patient. To prescribe a certain quantity of blood to be taken, is a dangerous, indolent and unjustifiable proceeding,—for it is impossible to know, *a priori*, what the quantity should be.” In other parts of the volume, blood-letting, agreeably to this plan, is recommended as a tentatory means, on the olden principle of the *ledentia* and *juvantia*. If the patient, when upright, bear abstraction of blood well, the case requires it; if he soon become faint, and his lips pale, the orifice must be closed, the disease is not truly inflammatory. This seems to us running out a particular opinion rather too far. We cannot but think that a physician who takes time can, with care, and a suitable knowledge of diagnosis, pronounce respecting the actual state of the suffering organ, and prescribe or withhold the use of the lancet accordingly.—Even in the particular test laid down by Dr. Hall, there is, we are sure, some fallacy. It happens that in some cases, the violence of the pain, and the shock to the nervous system is so great that its servitor, the muscular, is also excessively enfeebled, and the patient cannot even sit upright. In other cases, faintness is felt by the patient so soon as he attempts this position, even although he be suffering from phlogosis of an organ which imperatively requires blood-letting for its relief. Contrasted with this is that state of the circulation not materially affected by posture.—The differential pulse, so common in nervous disorders, and in most persons in health, is hardly observed in many of the violent phlegmasiæ, and it is nearly as difficult to diminish its activity and frequency of the heart’s action by blood-letting, when the patient is erect, as when he is reclining. But even admitting the force of these objections or rather exceptions, Dr. Hall’s advice is still worthy of all remembrance, and of being frequently adopted.

In Lecture seventh, Dr. Hall discourses on *Congestion without Rupture*, and *Hæmorrhagy, or Rupture, in the Encephalon*. They are, in other words, apoplexy and paralysis: “These affections, like encephalitis, may be in 1. *The membranes*, 2. *The substance of the brain*. Their causes and antecedent symptoms, are enumerated, with an attempt to establish their diagnosis, although in a

former lecture, the author had asserted that "apoplexy and hydrocephalus destroy the patient, by destroying the cerebral functions merely." Here he very properly details the symptoms which show that other causes contribute their full share to the fatal result, such as disordered functions of the spinal marrow, and of the ganglionic system; the latter manifested by a clogging of the bronchia and trachea with mucus.

He takes pains to impress on us the great difference in the degree of tolerance of the loss of blood by venesection, between mere congestion and rupture. In the former, blood to a large amount may often be abstracted before syncope is induced; in the latter, the system is extremely and even dangerously susceptible of this loss.

"*Tubercles of the Encephalon*," and "*Tumours of the Encephalon*," are next touched on, also *Hypertrophy* and *Atrophy of the Brain*, and *Mania*.—On these points, the remarks are few, not to say meagre. In speaking of atrophy of the brain, he has a sentence which is a practical contradiction to his notions respecting the excito-motory system. The sphincters are, he told us, directed by this system, which he also says, is one apart from the cerebral or the sentient and voluntary functions. "Frequently the patient becomes utterly helpless, and passes into *second childhood*, as it is termed; the evacuations passing involuntarily," is his language in the lecture now under notice. We are to infer then, either that the sphincters are governed by sentient and voluntary nerves, the cerebral system; or if they belong to the excito-motory, that this latter is also sentient and voluntary. In either case, the artificial distinction of Dr. Hall disappears.

The next or eighth Lecture, is on "*Cerebral Diseases resulting from Various Affections of the System*," viz., *Intestinal irritation; Exhaustion from loss of blood; Chlorosis; Excessive study; Shock; Alcohol, &c. Delirium tremens; Delirium traumaticum; Affections of the kidney; Dropsy; Ischuria*. Under the head of Chlorosis, we find the details of a case which terminated fatally, and of the post-mortem appearances. Oddly enough, although the author congratulates himself on obtaining, by the examination, "a satisfactory elucidation of the nature of the disease," he says nothing about the condition of the uterus.

The ninth Lecture on Diseases of the Cerebral Nerves, is characterised by some cases, and a good deal of French. We like to read French medicine, and French general literature, and profess to have derived much instruction from the former, and much pleasure from the latter; but we cannot say that we are partial to the kind of mosaic, made up of English, Anglo-Gallic, French, and here and there, scraps of Latin, which Dr. Hall has obtruded, first on his students, and subsequently on the reader, in his Lectures.

When he speaks of Diseases of the Spinal Marrow in a subsequent lecture, and indicates the mode of treatment to be pursued, he cannot think of telling us, in plain English, that cauterization and issues are useful. He politely insinuates the propriety of using them, in the language and words of M. Louis. The reader not conversant with French, will, in vain, look for any notice of the remedy in other parts of the lecture.

Epilepsy is described as being of two kinds—*centric* and *eccentric*; the first occurring from effusion, tumour, exostosis, &c., within the spine; the second

having "its source in the *excitor nerves*\* of the true spinal system, involving the axis of this system, and its motor nerves in their turn, functionally, however, not organically. The eccentric epilepsy is to be viewed as *curable*, however *difficult* of cure. The other, or centric, is for the most part incurable.

*Puerperal Convulsion, Tetanus, Hydrophobia, Hysteria, Chorea, Stammering, Asthma, Vomiting, Tenesmus, Strangury, and Abortion*, are mentioned in this lecture; each having a few paragraphs devoted to it, except the last, which, although introduced in capitals, as a separate caption, is thus summarily dismissed: "I have a number of facts which prove that abortion is frequently an excited act—excited through the spinal nerves of the rectum, and that its prevention depends upon removing and avoiding the causes of excitement." Were the author prone to such indulgences, we should suspect him of badinage in the sentence just quoted; and be induced to believe that he was ridiculing the pretensions of certain boastful philosophers, in this pompous and oracular manner of telling a well known truth. Verily yes! abortion is an excited act, and is neither spontaneous nor voluntary. And it is also often excited by irritation of the rectum, as every crone in christendom knows, without her ever having enjoyed the advantages of a knowledge of Dr. Hall's exciters or excito-motors. We hope that if the Doctor should, in another book, take up the subject of parturition, he may not find it necessary to announce, as a discovery of his own, that this act may be "excited through the spinal nerves of the rectum"; as when stimulating enemata are administered with a view to quicken the expulsive effects of the uterus and its associated muscles.

The twelfth and last lecture allows the author to introduce some brief notices of *Spasmodic Strabismus, Spasmodic Tic, Spasmodic Torticollis, Spasm of the Respiratory Muscles*, with, finally, four or five paragraphs on *Diseases of the Ganglionic Nerves*, and a postscriptum on *augmented action of the Sentient Nerves*, and something on the fifth pair. On this last point, the opinions of Bellingeri, Magendie, and Serres, are introduced; and they show, that except in new phraseology, Dr. Hall adds nothing to what has been written on this nerve. He does wrong to Sir Charles Bell, in saying that this gentleman views the fifth as a mere sensitive nerve. Sir Charles shows in his well known work on the Nerves, that a branch of the fifth goes to the lower jaw as a nerve of mastication, and of course, of motion.

In conclusion, we shall give the reader a good idea of these lectures, which we have thus cursorily noticed, in the words of the author himself:—

"The subject is but *sketched*. Perhaps it can scarcely be said even to be *sketched*. It is full of promise in reference to Anatomy, Physiology, and Practice."

Of the mechanical part of this volume we shall briefly say, that the text is disfigured by numerous typographical blunders, and the paper is a good specimen of the whity-brown. Our friends, the publishers, have both means and taste, and are not wanting in liberality. Why should not they do themselves and their readers justice, by a more uniform display of these qualities? always, of course within the bounds of business discretion. We cannot think so poorly of our professional brethren, as to suppose that the difference of a few cents in the cost of a volume, would affect their intentions in becoming its purchaser.

\* All the emphases given by italics, in this article, are strictly copied from the work itself.



*Principles of Pathology and Practice of Physic.* By JOHN MACKINTOSH, M. D., Lecturer on the Practice of Physic in Edinburgh, &c., &c., &c.—Second American, from the Fourth London Edition. With Notes and Additions, by SAMUEL GEORGE MORTON, M. D., late Physician to the Philadelphia Almshouse Hospital, and Lecturer on Pathological Anatomy; Author of Illustrations of Pulmonary Consumption, &c., &c. In two volumes. Philadelphia: Edward C. Biddle, 1837, 8vo. pp. 563 & 568.

THE successive editions which Dr. Mackintosh's Practice of Physic has gone through, both in England and the United States, must be received as good evidence of the estimation in which the work is held. Its circulation in this country has been to a greater extent than is implied by the title page of the volumes now before us. The present is, in fact, the *third* American edition, besides a reprint and circulation of the work in a periodical. Mr. Duff Green, who had it printed in his Register and Library of Medical and Chirurgical Science, published also a book edition, in 1834, constituting the first American, from the third London edition.

Neither a critical review nor analysis of these volumes can be expected from us in this place. If asked, on what grounds we commend them, as we do, to the perusal of our professional brethren, our reply would be; that the author has brought up his subject to the knowledge of the day, in connecting pathology with therapeutics, and in pointing how and to what extent the former illustrates and enlightens us in our use of the latter. He endeavours to fix our attention on diseases as derangements of function, and dependent, in a great measure, on altered tissues and organs, and does not mislead us by the abstractions so universal in nearly all the works published before his own in Great Britain. An appropriate beginning is the chapter on the doctrines, causes, phenomena and effects of inflammation,—after which comes a history of the general doctrines of fever—its divisions, descriptions and causes.

First in order is Intermittent Fever, in the account of which we find a very full description of the appearances found in dissections of those dead of the disease. But we may complain, that of the fifty-seven pages which the author devotes to the treatment, fifty-two are taken up with that of the cold stage alone, and exclusively with arguments in favour of, and cases to prove, the safety and efficacy of bleeding during this period. We cannot approve of the judgment of those friends, by whose advice he has been led to enlarge so much on this topic since the first edition of his work. Without denying the utility of the practice, in certain cases of intermittent fever, we cannot be brought to regard it in the light of *the* remedy which he would fain persuade us that it is. We have had some hundreds of cases of this form of fever under our care, when connected with a public institution; and although we are clearly convinced of the great importance of blood-letting in the treatment of it, and have freely used this remedy, as we have elsewhere stated, yet we cannot say that the cold stage is the period that we should select for using the lancet. The hot stage and the interval, according to circumstances, were with us more opportune times.

The treatment of the hot stage is dismissed in fourteen lines, which are, however, to the point. The following coincides with our own experience: "I need not speak of febrifuge and diaphoretic mixtures, which are very good for the druggist, will assist in filling the pockets of the routine practitioner, and suit the notions of a symptomatical physician. It is more than doubtful whether such medicines ever diminished the violence, or shortened the duration, of the hot stage of an intermittent." The cold bath, by affusion, and cold and acidulated drinks, are the best diaphoretics in this case.

A common error, in imagining that the only organic lesions which take place exist in the liver and brain, is pointed out by the author, who adds, that the brain and the lungs suffer, perhaps, more frequently. He has seen fatal affections of the heart arise, in the train of consequences, from intermittent fever. Bronchitis is also of frequent occurrence.

We could wish that in stating the circumstances under which the sulphate of quinine is to be given, and the adjuncts and means of increasing the susceptibility of the system to its operation, he had mentioned the blue pill, or, sometimes, small doses of calomel. Five or ten grains of the blue mass, in the evening, have, in our observation, singularly facilitated the febrifuge operation of the quinine. After blood-letting, we place this remedy next on the list, as the precursor and preparer for the satisfactory and successful use of the quinine. We hope to be distinctly understood, however, as not recommending to subject the patient to mercurial influence, as it is called, by causing either ptyalism or any tenderness of the gums. We should decidedly deprecate such a result; for we have seen it manifestly increase the susceptibility of the system to a fresh attack of disease.

More extension might have been advantageously given to the prophylaxis connected with Intermittent Fever. It is that part of the subject which will be found most serviceable.

Under the general head of Continued Fever, Dr. Mackintosh enumerates and describes, fevers from functional derangement, and from inflammation, congestive fever, mixed forms of fever, including synochus and typhus, hectic fever, and the eruptive fevers. Very properly, we think, are these last brought under the common head of fevers. Their precursory and actual symptoms, and the internal organic changes which accompany them, are of a similar nature to those of other febrile diseases. The great, and too often exclusive, attention paid by physicians to the appearance of the eruption, and the speculations by which we are taught to keep it out on the skin, have been instrumental in causing a timid and erroneous practice, and immense loss of life. The symptomatology furnished by the skin is often all that is attended to, whilst, at the same time, the most serious organic changes are going on in the internal organs.

We do not think that the author, in his directions for the treatment of Scarlet Fever, does justice to our favourite remedy, cold affusion. We have used it with manifest advantage in 'severe cases'; and have reason to believe that it has in our hands often contributed, more than all the other means employed, if we except blood-letting, to moderate the violence of the symptoms, procure comfortable repose, and cure the disease.

The following remarks on, and explanation of, a puzzle to those who have read much on the nature and treatment of fevers, are to the point:

"For a considerable time it baffled me to account for the discrepant histories of fever which have been handed down to us, and for the confidence with which opposite practices have been recommended to our notice; but further experience has convinced me that this discordance of opinion may be accounted for by one or other of the following circumstances:

"1st, A difference in the character of the prevailing epidemics, and the constitutions of the persons affected; for example, a functional fever will bear stimulating remedies which would kill a person labouring under an inflammatory fever, particularly if the inflammation affected a vital organ. A stimulant given in congestive fever may operate beneficially; whereas in functional fever, or in inflammatory fever, it would be very injurious. A well fed, and previously healthy soldier, who has no cares, will in general have a high-toned fever; whereas a poor, ill-fed, and badly clothed labouring man, worn out by cares and anxieties, and living in an ill-ventilated and filthy apartment, will be affected with one of an opposite character.

"2d, An arbitrary and too often empirical practice, which has hitherto been too frequently followed. One physician always bleeds in every case of fever, another stimulates; and when the results are analysed, perhaps it will be found that the proportion of deaths is the same, and even these results will vary to support the one practice or the other, according to the habits and constitutions of the patients; for instance, if our army and navy surgeons were to stimulate throughout the course of the fevers they have to deal with, they would scarcely save a patient; and if practitioners entrusted with the care of the sick poor were to bleed all their cases of fever, they would be quite as unsuccessful.

"3d, Writers are too often guilty of an error which all medical men are liable to commit, viz., of mixing up opinions with matters of fact in their statements.

"4th, The prevailing habit of drawing sweeping conclusions from one or two facts.

"5th, Unphilosophical attempts to bolster up erroneous views by special pleadings."

The *Second Part* contains the history and treatment of *Diseases of the Organs connected with the Digestive System*. The section on *Puerperal Peritonitis* is full, and abounds in criticism on opinions and practice,—particularly those of Dr. Jas. Hamilton, jr. The author sides with Armstrong, in recommending venesection and leeching. Dr. Lee is freely quoted as authority on the subject of inflammation of the uterus, its absorbents and veins.

Diarrhœa and dysentery are traced to their real organic cause and seat, in irritated or inflamed mucous coat of the bowels, and are spoken of and treated accordingly. East India dysentery, complicated with hepatitis, receives its full share of notice.

In the long section on Asiatic cholera, we read, what perhaps is new to many of our readers, that in the Drummond-street hospital, under the charge, at the time, of Dr. Mackintosh, there were one hundred and fifty-six patients into whose veins saline injections had been made, twenty-five of whom recovered.

In detailing the treatment of Jaundice, the author says: "If there be pain, the application of leeches may be necessary, conjoined with contra-irritation." We would add, that venesection is not unfrequently called for in this disease.

The section on inflammation of the Spleen is chiefly made up of extracts from

the valuable clinical illustrations of Mr. Twining, of Calcutta, whose opinions are also freely invoked on the subject of hepatitis.

The third part of the work, being that on the "Diseases of the Organs connected with the Respiratory System," is opened with some pertinent remarks on the subject of percussion and auscultation, and on the obligations of the profession to Laennec, "the individual, of this age, to whom the science of medicine stands most deeply indebted." We give the author's language on this point, but without adopting his opinion. His authority on the subject of diagnosis of diseases of the thoracic viscera ought to have the more weight, since he is not of the younger class of the profession, and evidently began the use of the stethoscope at an age when so many others think themselves privileged to ridicule or neglect it. He says appositely enough :

"A great deal of opposition has been made, and many frivolous objections have been urged, against the employment of auscultation, principally by three classes of practitioners. *1st*, Those who are too well employed, and who have not time to learn any thing new. *2dly*, Those who are dull of hearing, or devoid of the power of discriminating between sounds which have some resemblance to each other. *3dly*, Those who are too indolent or too old."

After replying to the objections brought against the use of the stethoscope, he continues by adducing the following interesting facts. We introduce them here with the double purpose of illustrating this particular subject, and of showing cause for our opinion expressed at the outset, in favour of Dr. Mackintosh's labours.—

"A few years ago, I was requested to see a patient who had been under the care of several medical men, and by way of giving me every necessary information, his friends put me in possession of all the recipes which had been recommended;—they would have made a moderately-sized quarto volume. At one time, it was supposed that he had stomach complaint, and all known tonics were prescribed; at another, it was supposed to be scrofula, for which he took large quantities of the muriate of lime; at last, he was suspected to have diseased liver, and he got large quantities of mercury, and was several times completely salivated. Upon applying the stethoscope, I discovered a cavern in the superior lobe of the right lung, and was doubtful whether another did not exist in the left. Next day, I had the advantage of a consultation with Dr. Scott, whose superior knowledge of diseases of the chest, and stethoscopic tact, I am happy to have this public opportunity of acknowledging. He was merely asked to see a patient with me, without knowing the result of my previous examination, which he confirmed, with this addition, that he had also no doubt of the existence of a cavern in the left lung; and it was afterwards proved to be correct. A remarkable case occurred to me some years ago, at a time when I was only beginning to make some progress in the use of the stethoscope. A man presented himself, with many of the ordinary symptoms of indigestion, and without a single sign indicative of disease of the lungs. I examined him carefully with my ear, with a view of perfecting myself in the natural sounds elicited by respiration, and the tones of the voice, when, to my astonishment, I thought I discovered a small cavern in the superior lobe of one of the lungs. At that time, Dr. Wavel, an excellent stethoscopist, was a pupil at the dispensary. He was requested to examine the man, without being made acquainted with my suspicions. Upon comparing

notes, he was of the same opinion. It was subsequently discovered that the man coughed a little in the morning, but not so much as to attract even his own attention; upon dissection, some months afterwards, our diagnosis was fully verified."

The benefits from bleeding, either general or local, or sometimes both, in whooping cough, are mentioned by the author. The most rapid cures which it has been our good fortune to obtain were of cases in which venesection, from the habit of the patient and the symptoms of fulness in the head and lungs, had been freely resorted to.

In pneumonia, contrary to the belief of many, "the formation of an abscess in the lungs is a rare circumstance." Dr. Mackintosh saw one, or at most, two instances of it. Laennec says he has seen it only five or six times.

Among the remedies for asthma, stramonium is entitled to a more conspicuous notice than it receives, in being only once mentioned among the narcotics recommended by Laennec. We know of no one remedy which will give relief with the same promptitude and general success as the extract of stramonium, in full and repeated doses until it produces manifest effect on the brain and nervous system generally.

In the fourth part, with which the second volume begins, we have the diseases of the circulatory system. The diagnosis of the diseases of the heart, and the value to be attached to its different sounds, are given with some fulness by Dr. Mackintosh. This part alone would invite and arrest the attention of the professional reader, and suffice to secure his perusal of the entire work. Nearly fifty pages are taken up with a description of the diseases of the heart and their cure.

The fifth part is on diseases of the nervous system. It is begun by a brief sketch of the functions attributed to the several parts of this system, in which respectful notice is made of the talents and labours of Gall and Spurzheim. We may regret that apoplexy and palsy are discussed with such brevity. The two have eight pages given to them. The chapter on insanity, although relatively short, is good and to the point.

Part sixth is on diseases of the eye and ear. The notices on those of the ear are quite meagre. The otitis to which infants and children are so subject, does not receive a separate mention.

Diseases of the skin is the subject of part seventh. Erysipelas, which it is no easy matter to place with due regard to its affinities, is introduced here, not, we think, very correctly. Its more appropriate position would seem to be among the eruptive fevers, with which it has much more affinity, in regard to the constitutional derangement by which it is so generally accompanied and also its treatment, than with the affections of the skin, as we generally find them classed. Dr. Mackintosh bears testimony to the efficacy of free and early venesection in erysipelas attacking persons not greatly debilitated by previous disease, or bad habits. In these latter cases, and where the disease, having passed its first stage, is about to terminate in extensive suppuration or gangrene, or when it has taken place towards the termination of an acute or chronic inflammation of a vital organ, or at the termination of fevers, general bleeding would be productive of dangerous consequences. "The application of leeches upon the inflamed part stands next in importance to general bleeding. Their number is to be regulated by the age and constitution of the patient, and also by the intensity, extent, and duration of the disease." Dr. Mackintosh has been in the habit "of adopting this prac-

tice since the year 1811, and with uniform success. But, he adds, I employ them only when the disease is in its first stage, and, contrary to the predictions of many individuals, neither ulceration nor mortification has ever ensued."

To the accuracy of the following statement every observing practitioner must bear testimony. Ignorance of the truth which it contains has been productive of immense mischief, by encouraging the empirical use of washes and unguents, as cosmetics, beautifiers and purifiers of the skin, &c. The local irritation or blemish may sometimes be removed by these means, but, in such cases, there is merely a transfer of disease to a more important and vital organ.

"In almost every instance of cutaneous affection which has fallen under my observation, whether it has been attended by fever or not, I find ample evidence in the history of the case, of functional derangement of some internal viscus; in some, the stomach and bowels are at fault, as in urticaria, erythema fugax, many cases of lepra, &c. while others are evidently connected with disease of the liver, mucous membrane of the lungs, &c. Erysipelatous inflammation is always the consequence of some internal disease, either functional or structural, sometimes of the stomach and bowels, at others of the lungs, and occasionally of the brain."

Part eighth is on the diseases of the urinary and genital organs, and embraces much valuable matter. The difficulty of classification is evinced here in the fact of inflammation of the kidneys and bladder being classed with syphilis, and inflammation of the uterus and the diseases of menstruation. Even were space allowed us, we might be excused from any extended notice of the diseases peculiarly incident to females after the analysis which we have just made of Duparcque's excellent treatise on this subject.

The view entertained by Dr. Mackintosh of the common cause of dysmenorrhœa, and of its mode of relief, if not absolutely original with him, has been so fully carried out in practice as to deserve particular notice. He believes that a frequent cause of this disease is the mechanical obstruction presented to the discharge of menstrual fluid from the uterus, by the extreme smallness of its mouth and the canal leading into the cavity of the body. Accordingly he had recourse to mechanical dilatation as the remedy. The instruments used to produce this effect are the common metallic bougies, of different sizes, from that of the ordinary small silver probe to No. 14. In *twenty-seven* women, in whose cases he performed this operation, *twenty-four* cures have taken place, and of these *eleven* subsequently had children. The mode of introducing the instrument is detailed in the work, p. 407, vol. ii.

The ninth, and last part is on gout, rheumatism, scrofula and dropsies. This arrangement cannot, certainly, be called a natural one. Readiness of reference is, however, in, so called, systematic works, what the reader most wants, and of this we cannot complain on the present occasion.

It will have been seen, that our brief notices of Dr. Mackintosh's principles of pathology and practice of physic, which we have just given, are such as might be made by a reader of any experience, whilst turning over its leaves. Imperfect as they are, they will be found, notwithstanding, sufficiently numerous and diversified to show the general character and scope of the work, and to prove the justness of the favourable opinion which we entertain of its general merits.

But we cannot dismiss the subject entirely, without expressing our regret, that the author should have disfigured his narrative and descriptions by an acerbity

of remark on some of his professional brethren, and a harshness of stricture on their opinions, which were not called for by his present position before the English and American public, whatever excuse he might have found for such digressions on the plea of self defence, when lecturing to his class, or occasionally contributing to the pages of a periodical. A person who is thus at war with his compeers, both in and out of university office, may, by a bare possibility, be right in fact and in logic, but the world at large will ever be convinced that he has an unfortunate infirmity of temper, which disqualifies him from taking that social position which his good qualities and attainments might otherwise have secured to him.

After paying our respects to the author, courtesy requires of us a bow to the editor of his work. Dr. Morton has executed his task with commendable patience and fidelity, introducing, as little as possible, doctrinal matter, but adding frequently and materially to the practical illustrations and details. The exceptions to his usage, in this respect, are such as the reader will be most ready to thank him for. They are a view of the physiological doctrine of fever, in the preparation of which he acknowledges the valuable assistance of Dr. Joseph Carson, professor of *Materia Medica* in the College of Pharmacy; and the chapter on cholera, in arranging which he tells us he was under important obligations to Dr. R. R. Porter, resident physician to the Frankford Asylum for the insane. To the chapters in the original, Dr. Morton has made valuable additions on the subject of typhoid fever and varioloid, cow pox and vaccination, the pathology of phthisis pulmonalis, change of climate, spinal and ganglionic irritation, &c., &c.

*Plates of the Cerebro-Spinal Nerves, with References for the Use of Medical Students.* By PAUL B. GODDARD, M.D., Prosector of Anatomy in the University of Pennsylvania; Member of the Academy of Natural Sciences, of the Philadelphia Medical Society, &c. Philadelphia: J. G. Auner, 331 Market street. 1837.

THIS contribution to anatomical study by Dr. Goddard, is both valuable and seasonable. It supplies to the student a reference on minute parts of structure which it behoves him to become well acquainted with in the beginning of his career, and to well remember in his subsequent course. The author very truly says—"The nerves have always been a stumbling block to the student, in consequence of the difficulty of dissecting and studying them in their various relations."

The plates are twelve in number, which contain in all twenty-nine figures—beginning with a view of the base of the brain and the twelve pairs of nerves implanted in it, and ending with the nerves of the lower extremities. The divisions and distributions of the fifth nerve are clearly exhibited in plates fourth and fifth. Its functions, and the morbid phenomena of which it is so often the seat in various affections of the eye and teeth, and in neuralgia of the face and temples, render a knowledge of its anatomical relations not only agreeable but absolutely necessary to guide us in the employment of suitable therapeutical agents.

The connexion of the optic nerves with the tubercula quadrigemina, their

approximation and partial junction, or Chiasm, and their passage through the sclerotic coat, are well seen in plate third.

Plate fifth, exhibiting the ramifications of the *portio dura* over the side of the face and head, reminds us, forthwith, of Sir Charles Bell and his view of the functions of this nerve;—those of motion and expression of the muscles of the face, and of respiration, as far as the movements of the nostrils and lips are concerned in this process. Figure second, in the same plate, shows the termination and expansion, in the cochlea and semicircular canals, of the *portio mollis*.

Again are Bell's representations and arrangement of the respiratory nerves turned to account in plate sixth, which is, mainly, an exhibition of the par vagum or pneumogastric nerve. The glosso-pharyngeal and the ninth or hypoglossal are seen in plate seventh;—in the second figure of which, the nervous distribution to the tongue is beautifully displayed.

The thirty-one pairs of spinal nerves and the structure of the medulla spinalis are shown in plate eighth. The ninth and tenth plates, each having two figures, exhibit the nerves of the upper extremities; as the eleventh and twelfth, each having three figures, do those of the lower extremities.

In addition to the letter-press references and explanations, there is a copious index. These plates by Dr. Goddard, and Manec's representation of the sympathetic published with some corrections and a translation of the text in a single sheet by Dr. Pancoast, place it in the power of every student of common industry to become thoroughly acquainted with the course, divisions, and distributions of the nerves both of relation and of nutrition. Without a knowledge of this nature no man can pretend to act as a surgeon, or to speak and reason as a physiologist or a physiological physician.

*Lectures on the Morbid Anatomy, Nature and Treatment of Acute and Chronic Diseases.* By the late JOHN ARMSTRONG, M. D., Consulting Physician to the Fever Institution of London; Author of Practical Illustrations of Typhus and Scarlet Fever, &c. Edited by JOSEPH RIX, Member of the Royal College of Surgeons, in London. First American Edition: With an Account of the Life and Writings of Doctor Armstrong, by JOHN BELL, M. D., Lecturer on the Institutes of Medicine and Medical Jurisprudence, &c., &c. Two Volumes. Desilver, Thomas & Co., 1837, 8vo., pp. 474 & 463.

We have already borne strong testimony in favour of the Lectures of Doctor Armstrong on the Practice of Medicine, by our being the first to introduce his work to the notice and perusal of the American professional reader, through the pages of the '*Library*.' The volumes now before us are the same text, *literatim et verbatim*, as that which is already before our readers, with the addition of an introduction, containing the life and writings of the author, and a supplement, in his own words, derived from another of his works on the Internal Pathology of Febrile Diseases. Of the value of these additions it does not become us to speak.

We read in the introduction, that Dr. John Armstrong was born on the 2d of



May, 1784, at Ayres Quay, in the parish of Bishopwearmouth, in the county of Durham. His parentage was humble. After passing through the periods of childhood and adolescence without any signal display of talents, he began the study of medicine with a country apothecary. Soon wearied in his new situation, he went home, lounged about for two or three years, dreaming of his future course, scribbling poetry, and planning a tragedy. At the age of nineteen or twenty, he went to Edinburgh, in which city he resided as a student of medicine, and attendant on the medical lectures of the University, for a period of three years. The encouragement to commence, and the pecuniary means to prosecute his studies, were furnished by his mother, of whom he always spoke with feelings of tender regard and deep gratitude. He graduated in June, 1807, having written a thesis "*De causis Morborum Hydropicorum, Rationeque iis Medendi.*" He had previously, on the 5th of May, passed an examination at the Royal College of Surgeons, in Edinburgh. His health, at this time, was so deteriorated as to cause much solicitude to his friends. During his residence at Edinburgh, Dr. Hamilton, of purgative fame, was his favourite. Immediately after receiving his degree, Dr. Armstrong settled in Bishopwearmouth, whence he soon removed to the adjoining town of Sunderland; but, after a time, he returned to the former place. This last event was in his 28th year, when he had been only four years in practice, and yet he was able to keep his carriage. In the same year, 1811, he was elected physician to the Sunderland Dispensary, and obtained a wife. He soon became an author, and contributed papers to the ninth volume of the Edinburgh Medical and Surgical Journal, on *Brain Fever from Intoxication*, and on *Diseased Cervical Vertebrae*. About the end of the year in which these papers appeared, (1813,) he published his work on Puerperal Fever, for which he always retained an author's partiality. It procured for him the approbation of his professional brethren, and brought his name into public notice. In the following year he communicated a paper to the Edinburgh Journal, on a cure of "*Cynanche Laryngea, successfully treated*," in a girl ten years of age; and also one containing "*Additional facts and observations relative to the Puerperal Fever.*" In 1815, the last contribution which he made to the valuable Journal above mentioned, was an essay containing "Brief hints relative to the improvement of the pathology and treatment of those chronic diseases usually termed nervous."

The favourable reception which his treatise on Puerperal Fever met with, encouraged him to extend his views farther; and in 1816 his celebrated work on Typhus appeared, which "at once," says his biographer, Dr. Boott, "raised him to a very high eminence in his profession. It passed through three large editions in three years, and was received almost with acclamation by the medical public, not only in this country, but throughout America, where it obtained for him, from some of the most eminent professional men, the name of the modern Sydenham."

Dr. Armstrong's success as an author now impelled him to try a more extended field of practice, and, accordingly, he determined to remove to London; leaving his wife and two children at lodgings in Durham. In February, 1818, he repaired to the metropolis, with no other recommendation than that which his works and reputation afforded him. His season of trial, which means of doubt and anxiety, was short; since, we are told, that, within a year from the time of his settling in London, his prospects of practice were very much improved. His

introduction was the more flattering, because it was through the instrumentality of his professional brethren, to a few members of whom, or to their families, he acted the part of medical adviser. One of the first instances was in the wife of Mr. C. T. Haden, himself a distinguished practitioner. This lady had been seized with puerperal fever, of such a character as to induce her husband to despair of her recovery. Having heard of Dr. Armstrong's success in the north in this disease, and read his work on the subject; and having learned that he had settled in London, he instantly determined to go in search of him. After many inquiries, he succeeded in finding him. Dr. Armstrong, continues the narrator, instantly ordered a large depletion, which was repeated a second, and a third time, and within eight or ten hours from the time of Mr. Haden's leaving home, in a state of despair at the condition of his wife, he saw her, in his own opinion, out of danger; and her rapid recovery impressed him with feelings of profound gratitude towards the stranger, whose assistance he had so urgently sought.

The most vexatious circumstance consequent on Dr. Armstrong's removal to London was his rejection by the College of Physicians, before which it is necessary for all graduates of other universities than Oxford and Cambridge to present themselves, for examination and license to prescribe, before they attempt to practice, in London. The party chiefly injured by this act was the college itself. The causes on which the rejection was based have not been divulged. Of the unpopularity of the measure the strongest proof was exhibited in the election of Dr. Armstrong to the post of physician to the Fever Hospital of St. Pancras; the trustees suspending the by-law which made it necessary for a person holding such an office to be a member of the college.

In 1821 he first became a lecturer in the school established by the late distinguished Mr. Grainger. Here his fluency, animation, and the general kindness of his manners, soon ensured him a high degree of popularity among the students. Of his possession of the higher qualities of a lecturer, his biographer speaks in language approaching to enthusiasm. His first was the only one he ever gave from an entire manuscript; for his habit was to lecture from notes. Dr. Boott says: "I have in my possession all his note books, which are generally wholly unintelligible to me, as they consist of words without any immediate connexion. Many of his lectures are comprised in a few pages, written in a neat hand, for the facility of catching the thread of his discourse, and the names of persons frequently occur, whose cases he described in illustration of his views and treatment of disease."

We see, from the foregoing extract, why Dr. Armstrong's lectures were published and edited by a pupil in place of the task being undertaken by his biographer, Dr. Boott, or by an immediate friend of the family. Of the estimation in which Dr. Armstrong himself held the copy taken by Mr. Rix, proof is furnished in the lithographed copy of his letter addressed by the former to this gentleman, and inserted in the preface to the first volume of the present edition of the *Lectures*. Our readers of the Library are also in possession of this document.

Besides his lectures on the Practice of Physic, Dr. Armstrong delivered a course of lectures on the *Materia Medica*. These were chiefly upon the practical application and effects of remedies in disease; and the same powers of minute observation, which were so conspicuous in his course on physic, were equally

displayed on this interesting subject. He had paid particular attention to it in his practice, and was always judicious and discriminating in the means he employed.

In May, 1822, he communicated "some Observations on the Origin, Nature, and Prevention of Typhus Fever" to the Medical Intelligencer, then conducted by his friend Mr. Haden; and at the request of the same gentleman, he furnished in July, 1823, "some Observations on the Utility of Opium in certain Inflammatory Disorders," to the Transactions of the Associated Apothecaries of England and Wales. These were the only productions of his pen since his work on Measles, Scarlet Fever, Consumption, Chronic Diseases, Sulphureous Waters, External and Internal Inflammation, Insanity, &c., which appeared in 1818; with the exception of the annual reports to the Fever Hospital, which he wrote alternately with his colleague, Dr. Cleverly.

In 1826, he formed a new school of medicine, in Little Dean Street, Soho, in conjunction with the late Mr. Bennet and Dr. Boott; he still continuing his lectures in the borough. But this double occupation was abandoned in 1827, and his labours were then wholly devoted to his increasing practice, and to lecturing in his original borough school.

The life of Dr. Armstrong at this time was one of incessant occupation; and the only relief from its labours and anxieties that he either sought or was susceptible of, was in the bosom of his family. The evening found him worn and exhausted by the exertion of the day, incapable of appreciating any enjoyment but that which his social circle imparted, and wholly incapacitated for the labours of the closet. He had long formed a plan for revising his works and putting them into a more condensed and improved form, but he never found leisure for the task. For some years he had been collecting materials for a work on chronic diseases; and in 1828 he published the first fasciculus of "The Morbid Anatomy of the Stomach, Bowels and Liver; illustrated by a series of plates, with explanatory letter press, and a summary of the symptoms of the acute and chronic affections of the above-named organs." He intended that this work should be followed by a volume descriptive of the nature and treatment of chronic affections; but he did not live to put his design in operation. His Morbid Anatomy was only extended to the fourth number. But it was decreed that his brilliant course should soon terminate.

Near the conclusion of the year (1828) that disease which brought him to the tomb, manifested itself in a cough and unusual weakness after common exertion. After several visits to the country, and deceptive intervals of apparently returning health, Dr. Armstrong expired on the 12th December, 1829, aged forty-five years, seven months, and four days.\*

We are fain to content ourselves, in this place, with presenting to our readers a notice of the most important events in the life of this justly distinguished man,

\*Not many days before his death, the stethoscope was applied to his chest by Dr. Thomas Davies, and the precise accuracy of the diagnosis was verified by an examination after his decease. A large tubercular excavation occupied the upper third of the left lung, capable of containing from twelve to sixteen ounces of fluid; and the remaining portion of the lung was filled with tubercles in all their stages. The upper half of the right lung was also filled with tubercles, accumulated in rounded masses, the interval between these last being tolerably healthy; its apex contained an excavation capable of holding a small sized walnut.

apart from the reflections on its incidents, and on the character of his works, which are given in the introduction to these volumes.

Dr. Armstrong was in person tall and thin; his manners were gentle and unassuming, almost diffident in the presence of strangers: exclusively domestic, and retired from the world, when the calls of duty did not require his intercourse with it. His nature was candid, confiding, and unsuspicious; his sensibilities lively and acute; his tastes discriminating and refined. He was a deep and enthusiastic admirer of woman. There was a tenderness, blended with dignity, in his manner towards her, of which the most intimate friendship never made him forgetful, and a delicacy in his conduct, which, united with the characteristic firmness and persuasion of his manner as the physician, contributed largely to his success in life.

He was more exclusively and anxiously devoted to the duties of his profession, says Dr. Boott, than any man I ever knew. Nothing it required ever appeared to him an encroachment upon his time, or an invasion of his ease. He never refused to attend to the calls of distress, and was always most liberal of his time and advice to the poor.

His pupils were warmly attached to him, from the interest he took in their improvement and their comforts. He watched over them in sickness with paternal solicitude. He blended so much of the generosity of his nature, the sensibility of his feelings, and the purity of his taste in his lectures, that no public teacher was ever held in higher estimation or respect. No one who was unable to incur the expense of taking his tickets was ever dismissed as an unsuccessful applicant. Such, indeed, always found in him the friend in need: for he obtained for them free admission to the lectures of his colleagues, and assisted them in other ways to complete their medical education.

Without being learned, he was fond of literature. Of his early poetical feelings mention has already been made. Some specimens of his, indicative of good taste and smoothness of verse, are introduced by Dr. Boott.

In delineating the distinctive merits of the Lectures now published, it has been well said by our able London contemporary, who is not by any means a partial judge: "We admire, in almost every page, the precise and cautious practical directions; the striking allusions to instructive cases; the urgent recommendations of his pupils to be careful; to be diligent in observation; to avoid hurry and heedlessness; to be attentive to the poor. Nothing can be more excellent than the rules laid down for all the parts of the delicate management of fever patients; nothing more judicious than the general instructions arising out of the lecturer's perfect knowledge of mankind, and his perfect discrimination of the relative characteristics of the upper, the middle and the lower classes. His prudent admonitions respecting the employment of some of the heroic remedies, as mercury, arsenic, and colchicum, attest his powers of observation and his practical merits."

We feel, whilst reading his lectures, as if we were enjoying the conversation of a man of extensive experience, who introduces us to the sick room and places the whole scene before us—the embarrassments from the nature of the disease, the obstacles to a cure from the character of the patient and the perverseness of friends, from the failure of medicines, their unlooked for and violent and dangerous effects. Principles are illustrated by cases, and the memory is aided by anecdote, all furnished from his own store, without the wearisome details of others' opinions,

and the review of conflicting authorities. More attention than usual is paid to all the predisposing and remote causes of diseases; and the details of pathology are followed by a more precise specification of therapeutical agents, and of the rules which govern us in their use and selection, than is to be found in systematic works on the Practice of Physic.

The blemishes which occasionally disfigure these many and obvious excellencies, are a needless display, perhaps it might be called affectation, of simplicity of language, an undue depreciation of Cullen, and strictures on colleges, and the learning from books.

We do not deem it necessary, for the purposes of liberal criticism, to institute a comparison between the two works on the Practice of Medicine which we have felt ourselves required to notice in the pages of this month's Journal. Each has its distinctive and peculiar merits, and each presents strong claims for its perusal of, or reference to, by both student and practitioner. Both works may and ought to be in the library of every medical man who aspires to a full knowledge and ready use of the resources of his art, to enable him to meet emergencies which, without their aid, would leave him a concerned and agitated spectator, in place of being an active and efficient well-doer.

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#### LITHOTRIPSY.

At a meeting of the Royal Academy of Medicine in Paris, M. Segalas introduced a child three years of age, on whom, when yet two years and nine months old, he performed the operation of lithotricy. The entire time of cure was six weeks; in which period the instrument had been introduced and used six times.

This is probably the youngest subject yet operated on in this manner, and will form an exception to the prevailing rule, that neither lithotricy nor lithotripsy can be performed at so tender an age.

*Apropos*, Dr. Gibson informs us, that all the cases mentioned in his communication to the *American Journal of the Medical Sciences* for August, 1836, as having been operated on by him, are entirely cured.

Mr. Liston, in his *Elements of Surgery*, a copy of which we have just received, and shall put to press, for insertion in the LIBRARY, expresses himself as not very sanguine in supposing that the breaking up of the stone in the bladder will ever supersede lithotomy. At the same time he admits that this operation is very advisable in certain cases, and may be resorted to with every prospect of a safe, speedy, and successful conclusion.

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#### ANATOMICAL DISCOVERIES IN 1836.

The anatomical discoveries of the year are thus summed up by Mr. Crosse.\*

Drs. Breschet and Roussel, trusting to microscopical observations, have minutely described the anatomical appearances of the skin, and satisfactorily demonstrated the sudorific exhalent ducts; the inhalents they have not been able

\* Retrospective Address, delivered at the Fourth Anniversary Meeting of the Provincial Medical and Surgical Association, held at Manchester, July 21st, 1836. By John Green Crosse, Esq., F. R. S., &c.

to follow to a termination on the outer surface of the skin, and wish, therefore, that their account of them should be received *salvo errore*. Professor Müller has discovered some remarkable appendices connected with the minute arteries of the *corpus spongiosum* and *corpus cavernosa*, which promise to throw light upon the structure of the blood-vessels in all the erectile tissues.

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#### EXTRAORDINARY DELIVERY.

Malignant soft tumours, whether of the uterus or ovarium, when they present themselves in the vagina at an advanced period of utero-gestation, give to the less experienced medical attendant the idea of a *placenta prævia*, and many have acted under this erroneous impression. One of the most extraordinary cases I ever was summoned to, proved to be of this description; the operator passed his hand through the soft tumour in the vagina, and, missing the uterus, entered the abdominal cavity, seized and ruptured the gall-bladder, and actually delivered numerous biliary calculi *per vaginam*.—*Mr. Crosse's Address*.

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#### SURGICAL IMPOSTURE.

The following has been published by Dr. Krimer, of Aix-la-Chapelle, and copied by Dr. Balbirnie in his Inaugural Dissertation on the Speculum, applied to the Diagnostic and Treatment of the Organic Diseases of the Womb:—

Madame de C., aged forty years, had all the vaginal part of the uterus in a carcinomatous state. A practitioner made the re-section of it, in the presence of a great number of spectators. At the end of fifteen days, he declared the patient cured, and presented her, as such, to a medical society. Her improved state continued during two months; at the end of this period, a leucorrhœa commenced, and became more and more abundant, and more and more fetid.

The lady was sent to the Spa-waters, and there was seized with several abundant menorrhagias. She removed to Aix-la-Chapelle, seven months after being operated on at Paris. The touch recognised ulcerated vegetations, half the size of the fist, upon the neck of the uterus. Three months afterwards, she died at Ostend; and, nevertheless, she figures among the cases completely cured by amputation.

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#### OPERATIONS FOR CATARACT.

At a meeting of the Academy of Sciences, in Paris, in December last, M. Roux stated that, within the last thirty years, he had operated for cataract 4,500 times; not, of course, on this number of patients, as in many instances the affection was present in both eyes. At the commencement of his practice, M. Roux had no prejudice in favour of either of the two methods commonly employed; he viewed depression with as much favour as extraction, and submitted both to thorough trial during a period of ten years; he then examined the results of all the operations, amounting in number to about 600. This comparison led him to form a conclusion decidedly favourable to extraction, and he has, since then, adopted this as his ordinary practice, reserving the other mode for the few cases which appear peculiarly adapted for its application; the proportion of which, according to M. Roux, does not exceed 1 in 20.

## FORTHCOMING WORKS.

THE promises given at the commencement of our labours are now in course of speedy fulfilment. Good and various are the terms characteristic, we hope, of the works hitherto introduced into the LIBRARY. We are glad to see the favourable opinion which we entertain of *Curling's Treatise of Tetanus*, confirmed by the *Medico-Chirurgical Review*, in which a copious notice of the work is terminated by the following language:—

“A formal eulogy of this unpretending but very excellent book would be superfluous. The use that we have made of it, the space the present article occupies, assure our readers that we entertain a very high opinion of the industry and judgment of its author. Itself, for the most part an analysis, we could not analyse it. We have been compelled to extract rather than abridge, for who could much abridge summaries of facts?”

“The book should be in the library of every surgeon and physician. It is a valuable work of reference. It does not pretend to originality, for originality on such a subject was not wanted. But a compendium of facts *was* wanted, and such a compendium is this volume. We cannot part from Mr. Curling without thanking him for the information we have received in reading his work, and for the matter it has enabled us to offer to our readers.”

But our present purpose is to inform our readers that in the next number of the LIBRARY will be begun the insertion of *A Treatise on Insanity and other Diseases affecting the Mind*, by James Cowles Prichard, M.D., F.R.S., Corresponding Member of the Institute of France, &c. Of Dr. Prichard's work, the *Medico-Chirurgical Review*, after devoting two long articles to it, says:—“The author is entitled to great respect for his opinions, not only because he is well known as a man of extensive erudition, but also on account of his practical acquaintance with the subject on which he writes. The work, we may safely say, is the best, as well as the latest, on mental derangement in the English language.” On no one medical subject is there so great a deficiency of published works in the United States as on Insanity. We propose, in part, to supply this omission.

Following Prichard, will come *Liston's Elements of Surgery*,—a work of a purely practical nature, written in a plain and clear style. It will, we think, be decidedly popular.

We have, also, on our table *Facts and Cases in Obstetric Medicine, with Observations on some of the most Important Diseases incidental to Females*, by J. T. Ingleby, Member of the Royal College of Surgeons, Lecturer on Midwifery at the Royal School of Medicine, Birmingham, &c., &c.

Thus, in a comparatively short period and at a moderate cost, the subscriber to the *Select Medical Library* will, as promised at the commencement, find himself in the possession of works on the Theory and Practice of Medicine and of Surgery and Midwifery, together with valuable monographs, such as those on Tetanus, Insanity, &c., &c., and accounts of medicine, medical practice, and medical education, in all parts of the civilized world.

# THE ECLECTIC JOURNAL OF MEDICINE.

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EDITED BY JOHN BELL, M.D.

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## BOUILLAUD ON DISEASES OF THE HEART.\*

NOTWITHSTANDING the zeal and assiduity with which the physiology and diseases of the heart have of late years been studied, and the number of individuals of high and acknowledged talent engaged in such investigations, the subject is yet far from being exhausted; nor is our knowledge of it perhaps even yet brought up to the level of that possessed concerning many less important organs. Several points of great doubt and difficulty still agitate the medical world in regard to it; and, under these circumstances, it was with much satisfaction that we observed the announcement of the present work of M. Bouillaud, an author already so favourably known by his labours as editor and joint-author of M. Bertin's Treatise on the Diseases of the Heart, which appeared about eleven years since. The present is by no means to be looked upon as a republication of the former work: it may be said, however, to contain all that was really valuable in it, with an immense accession of additional facts; the practical part bearing the stamp of increased experience, and the theoretical portion, of mature judgment and more correct generalization. Some of the hypotheses which, in the former work, were put forward in too absolute and unqualified a manner, have here been to a certain degree modified, and the range of their application somewhat limited.

*History.*—The foundation of our present knowledge of the diseases of the heart and great vessels appears to have been laid by Lancisi, Valsalva, and Albertini. Morgagni followed up the subject with great success; and about the same period Senac brought out his valuable Treatise on the Structure and Diseases of the

\**Traité Clinique des Maladies du Cœur, précédé de Recherches nouvelles sur l'Anatomie et la Physiologie de cet Organe.* Par J. BOUILLAUD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris, 1835. Deux tom. 8vo. pp. 534, 632.

A Clinical Treatise on the Diseases of the Heart, preceded by original Researches on the Anatomy and Physiology of that Organ. By J. BOUILLAUD, Clinical Professor to the Faculty of Medicine at Paris.

VOL. I.—16



**Heart.** When Lancisi pointed out the fact, that oppressions of the chest, and asthmatic affections, instead of being idiopathic, as formerly supposed, originated often in disease of the heart, he did a signal service to pathology. This idea was not lost on Morgagni, who gave it additional development and illustration, though its full importance was scarcely appreciated till the time of Corvisart. The last-named writer's *Essay on the Diseases of the Heart* forms an era in respect to this class of affections: his new division of aneurism of this organ, though not sufficiently comprehensive, nor altogether correct, had the merit of concentrating attention on the subject, and paving the way for the subsequent more accurate investigations of Bertin and others. His account of pericarditis, of vegetations and indurations of the valves, and the consequent contraction of the cardiac orifices, together with the revival of Avenbrugger's invaluable method of percussion, fully establish his claims to a distinguished place amongst the successful investigators of this class of diseases. He was speedily followed by Burns in this country, Testa in Italy, and Kreysig in Germany. Bertin, in a succession of memoirs presented to the Academy of Sciences, in 1811, and subsequently, brought forward some very original views as to the true nature and mode of formation of aneurisms of the heart, as they used to be called; and, not very long after, Laennec threw a brilliant light on the diagnosis of diseases of the heart, as well as of the other organs contained within the cavity of the thorax, by his happy discovery of auscultation. In 1824 appeared M. Bertin's *Treatise on the Diseases of the Heart*, mentioned above. Dr. Hope's work on the *Diseases of the Heart and Great Vessels*, with its ingenious investigations as to the motions and sounds of the former, appeared in 1832, and served to give a fresh impulse to this branch of medical science, which has possessed during the last few years a greater number of indefatigable and able cultivators than almost any other department of medicine. The names of Andral, Louis, Turner, Magendie, Williams, Corrigan, Pigeaux, Carlisle, Stokes, and many others, will occur to our readers, and justify the above assertion.

*Claims of the Author.*—M. Bouillaud founds his claims to being considered a useful labourer in this field, on the following grounds: first, that he has been instrumental in giving additional development to many observations made by preceding inquirers in relation to this class of disorders, and thrown the light of analysis on many of the complex affections heretofore vaguely designated under the general terms of aneurism or organic lesion of the heart. It is thus, for example, that he claims to have demonstrated that the peculiar collection of symptoms, referred by Corvisart and his followers to hypertrophy or to aneurism of the heart, is in most cases merely an effect of certain lesions of the valves of this organ; lesions, of which the aneurism and hypertrophy should themselves also be viewed only as consequences.

Secondly, he conceives he has thrown a new light on acute inflammation of the pericardium, and that henceforward pericarditis, in relation to its causes, symptoms, progress, and termination, may be considered fully as well understood by us as pleurisy itself; a conclusion in which, we apprehend, many of our readers are not yet prepared to acquiesce; and which, indeed, the cases in the subsequent part of the work, (and we allude especially to those where an attempt has been made to contrast, and mutually to distinguish, inflammations of the internal and of the external lining of the heart,) scarcely bear out. The failure is most conspicuous in those instances of disease where the effusion is extremely limited in quantity. As to the etiology of pericarditis, he believes that, in a vast proportion of instances, the disease is connected with rheumatism; a source which, in a more limited sense, has long been recognized by practitioners here, though probably few will agree with our author in viewing it as one of the ordinary concomitants of acute articular rheumatism, or admit that it exists in at least one half of all such cases. Indeed, even in France, M. Bouillaud is considered to carry the matter rather too far in this respect; and Fouquier, Marjolin, and others of great experience, protest against such an extreme degree of latitude being given to a cause of which, in a more confined circle, they fully acknowledge the influence. In the treatment of this disease he thinks he has introduced a valuable improve-

ment, in his mode of very copious and frequently repeated bleedings, in consequence of which recovery has been effected in a very great proportion of his cases; and death, which in Corvisart's time was the rule, has now, as he expresses it, become the exception.

Thirdly, he conceives that he has conferred on medical science an important benefit by his investigation of the inflammation of the sero-fibrous tissue lining the internal surface of the heart's cavities; a lesion which, prior to his inquiries, had excited so little notice as not even to have been thought worthy of name. On this disease, on account of its situation, he has bestowed the appellation of *Endocarditis*; and to his description of it he points with confidence as being at once the most original and valuable portion of his book; conceiving a knowledge of it to be of first-rate importance, as well on account of the frequency of its occurrence, which is much greater, he thinks, than most practitioners are aware of, as on account of the serious organic lesions of the cardiac orifices and their valves, as well as of the subjacent muscular structure, to which, if suffered to pass into its chronic stage, it tends to give rise. Its chief cause, like that of inflammation of the external covering of the heart, with which it so often coexists, is, he is satisfied, of a rheumatic nature; for it is a very frequent concomitant of acute rheumatism of the joints, and exposure of the body to cold when in an over-heated state is one of the most frequent conditions under which it arises. The obscure cases of arthritic asthma, as it was called, to be met with in the older writers, were, he believes, neither more nor less than instances of this affection in its advanced and chronic form.

*Division of the Subject.*—The practical part of the work is prefaced by a detailed investigation of the anatomy and physiology of the heart, with a full exposition of its sounds, normal as well as abnormal, as also, of those of the arteries, and a long discussion of the various theories of their production hitherto advanced. The pathological portion of the book is divided into two parts, the first of which consists of general considerations as to the anatomical characters and the precise seat of the various diseases of the heart; their physiological characters and their diagnostics; their causes; their nature and classification; their progress, duration, and probable termination; their treatment; and finally their complications, as well with each other as with diseases of other organs.

In the second part each affection of the heart is considered individually, and in the order of its place in the classification which M. Bouillaud has adopted; a classification which, though it appears to him better suited than any hitherto proposed to the actual state of our knowledge, he is far from considering as perfect. His first class comprehends such diseases as consist essentially in the lesion of the molecular actions of the heart ("actes intimes et moléculaires,") such as secretion, nutrition, &c. and consequently comprises acute and chronic inflammation (*Pericarditis, Endocarditis, Carditis*;) increase and diminution of secretion (*active Hydropericardium*;) increase and diminution of absorption, (*passive Hydropericardium, Hydro-pneumocardium*;) increase and diminution of the nutrition of the heart, (*Hypertrophy, Atrophy*.)

This second class consists of the neuroses of this organ, which he subdivides into those characterised by increase of action, hyperdynamia, (palpitations, spasm,) diminished action, adynamia, (swooning, syncope, &c.) irregularity of action, ataxo-dynamia, (inequality, irregularity, or intermittence of the pulsations.)

His third class comprises physical and mechanical lesions of the heart, (wounds, ruptures, dilatation, or contraction of its cavities or orifices, displacements,) &c. The fourth or last class consists of congenital malformations; whilst in an appendix there is an account of the coagulation of the blood within the cavities of the heart; or, in other words, of polypous concretions formed during life.

For the minute details of the cases, of which about two hundred are given, a great proportion of which are his own, he thinks no apology necessary; their increased length and fulness, as compared with those of most former writers, being the natural consequence of the extended state of our knowledge of these diseases. In regard to method, accuracy, sufficiency, or relevancy of detail, the

cases in many late French works cannot be read and compared with the meagre and hasty sketches of some of our own writers without exciting rather humiliating reflections, and affording ample conviction of the fact that the art of case-taking is far from having been brought to the same general degree of perfection here; an inferiority which may in part be attributed to the little responsibility till lately imposed on the great majority of our clinical students, as well as to the somewhat discreditable fact that cases are too often taken with no other view than to swell the pages of a book got up under the influence of a desire for temporary notoriety and wordly advancement, rather than under the genuine inspiration of a love of science. To this, however, we need scarcely add that there are very many honourable exceptions.

*Anatomy of the Heart.*—In the present article, we shall only be able to review the first portion of M. Bouillaud's work. After deprecating the unqualified assertion of Corvisart and Laennec as to the utter impracticability of accurately describing the heart, or of ascertaining the relative proportions of its parts with any thing approaching to mathematical precision; as well as that of Cruveilhier, as to the impossibility of determining the precise limit which separates the normal from the abnormal state; he endeavours to show that we may, by numerous observations and carefully repeated comparisons, attain to a very adequate notion of the mean volume and mean weight of the organ. He reminds us that here, as in all other departments of medicine, the *approximative* calculus is the only one with which we have to do. He has accordingly gone through a very laborious series of measurements of the size of the several cavities of the heart in a great variety of subjects, differing from each other as to age, sex, &c.; as well as of the absolute and relative dimensions of the orifices of communication, their valves, &c.; and to the results at which he has arrived we shall presently recur.

A knowledge of the anatomical relation of the anterior inferior portion of the lungs to the heart is very important in regard to diagnosis, for it points out to us the natural limits of the dull sound on percussion of the cardiac region in the healthy state. The extent of this dullness corresponds to that portion of the pericardium and heart which remains uncovered by the spongy and resonant tissue of the lung: any morbid enlargement of the one, or effusion into the other, increases the exposed surface to an extent which is accurately indicated by the increased dullness. Our author, however, seems to have overlooked two possible sources of error. The augmented dullness on percussion, though a very valuable sign, is yet not an infallible proof of the existence of the lesions above alluded to; for the interposition of a portion of hepatized lung, or of any tumour between the pericardium in the front of the chest, or a partial pleuritic effusion confined by false membranes, and local adhesions, would give rise to the same physical phenomenon; whilst an emphysematous state of the lung in the same situation might cause an error of an opposite kind, as it would mask in some degree the existence of an enlargement of the heart or the presence of a fluid distending the pericardium. "The anterior inferior edge of the right lung in the natural state projects a little over the right side of the pericardium and corresponding portion of the heart; whilst the left lung, advancing similarly over the left part of the pericardium, covers a considerable extent of the left cavities. The portion of the pericardium which is ordinarily left uncovered is that corresponding to the two-thirds of the anterior surface of the right ventricle: it presents the figure of a lozenge, and is from an inch and a half to two inches square." In some very rare cases, however, almost the whole anterior surface of the heart is covered by the lung.

The tortuous disposition of the muscular fibres of the heart, which baffled Steno and many subsequent anatomists, has been more successfully investigated in later days by Wolff, Duncan, and Gerdy, who have shown that the parietes of the ventricle consist of several layers differing in number for each ventricle. Of these layers there are, according to M. Gerdy, six in the left ventricle, and only three in the right; and hence the comparative thinness of the walls of the latter. The fibres of the external layers run obliquely from above downwards, from be-

fore backwards, and from right to left; the middle layers take in all respects the opposite directions; and the deep-seated ones, which by their union form the fleshy columns projecting into the interior of the cavities, are for the most part longitudinal. The most superficial layers, passing along the apex, occupy the entire circumference of the ventricles, whilst the others diminish in length and breadth in proportion as they follow a deeper course; and hence it is that the ventricles are so much thicker at the base than at the point of the heart. All the fibres, whatever may be their disposition in other respects, turn upon themselves in such a manner at the middle point as to form a species of loop, the convexity of which looks towards the apex of the organ: the more superficial the fibres are at the one extremity, the deeper seated do they become at the other: thus the most external fibres, for example, become before their termination the most internal, in consequence at once of their having been reflected in the manner just described, and also of having traversed the thickness of the ventricle. The extremities of these loops are invariably inserted at the base of the heart around the circumference of the auricular and arterial orifices of the ventricles, either immediately or, in a smaller number of instances, by the tendons attached to the auriculo-ventricular valves (*chordæ tendinæ*). The auricles, which are likewise of a very complicated structure, are, according to the same authority, composed of two muscular layers, the one external, the other internal. In the right auricle the muscular tissue, being less abundant than in the left, leaves occasional intervals between its fibres where the internal and external membranes of the heart are in almost immediate contact; and this proximity, which is best seen in the hearts of individuals in whom the right auricle has been considerably dilated with thickening of the muscular fibres, is turned to account by M. Bouillaud in a subsequent part of his work, as helping to explain the frequent coexistence of inflammation of the internal lining of the heart with that of the pericardium. The conclusions which have been arrived at by Mr. Carlisle as to the structure of the heart approach very nearly to those of M. Gerdy, whilst M. Filhos, on the other hand, still calls in question the continuity of the external with the deeper seated fibres; it appearing to him that, after turning from right to left and from above downwards in a spiral direction near the apex of the ventricle, they terminate in a well-marked raphé, from which the internal fibres likewise take their origin. The direction of the fibres of the right ventricle, moreover, he conceives to differ very materially from those of the left, forming semi-ellipses, of which the extremities are directed upwards and the concavity downwards. It appears to us, however, from the examination of the heart of a large animal, the fibres of which had been rendered more easy to disentangle by long continued boiling, that the opinions of the former of these observers are more correct than those of M. Filhos; and such seems likewise to be the conviction of M. Bouillaud.

The columnæ carnæ are much more numerous, but smaller, in the right ventricle than in the left, though the contrary has been inadvertently stated by Laennec. The muscular pillars into which the *chordæ tendinæ* of the valves are inserted are, according to our author, specially destined to raise the valves from the flattened position against the sides of the ventricles, and thus to effect the closure of the auriculo-ventricular orifices; but he is here in contradiction with Bichat and other celebrated anatomists; and it seems to us that, in his attempts to make out this point, he is not very clear or satisfactory.

The *chordæ tendinæ* are not the only examples of fibrous or albuginous tissue within the heart; for it exists also in the whitish zones or rings at the base of the valves, forming the contour of the orifices; also within the duplicature of the valves themselves; and it is this structure especially which is so frequently the seat of cartilaginous and osseous transformations. The existence of such a tissue here, taken conjointly with the sero-fibrous nature of the envelope of the heart, enables us the more readily to understand why rheumatism should so frequently make its attack on this organ. The internal lining of the heart, or endocardium, as M. Bouillaud names it, and which is to the inner surface of the organ what the serous layer of the pericardium is to the outer, has been too slightly attended to by anatomists and pathologists; though, according to him, its diseases are perhaps even more frequent than those of the pericardium itself. These have been

hitherto almost entirely overlooked or misunderstood in the acute stage, and thus permitted to pass into the chronic; and he conceives that he is guilty of no exaggeration in asserting that the affections of the endocardium are by far the most frequent starting-point of those organic lesions, as well of the valves as of the cavities of the heart, formerly, and even still at the present day, confounded together under the vague term of aneurism. The endocardium, in its natural state, is whitish, semitransparent, and pellucid, like the serous membranes; and, like them too, it readily receives by imbibition the reddish staining so often observable under certain conditions in the interior surface of the heart. Its thickness does not exceed that of the most attenuated serous membranes, the arachnoid, for example; and it is somewhat more delicate in the right cavities than in the left; whilst, at the arterial and the auriculo-ventricular orifices, it is obviously somewhat thicker than elsewhere: it is in these portions especially that the effects of chronic inflammation take place; and amongst these are to be reckoned the thickening, not merely of this membrane itself, but also of the subjacent cellular and fibrous tissues. Under this influence it sometimes acquires the consistence of a fibrous membrane; and we may then often discover several successive layers placed one over the other, as is so frequently the case after inflammation of the serous membranes, to which this bears such an analogy; whilst, at the same time, it is obvious, on careful inspection, that only one of these, namely, the deepest-seated, really constitutes the membrane in question, the other layers being merely organized pseudo-membranous matter. These false membranes, in their organized state, for the most part present themselves only in a partial or disseminated form, constituting the whitish patches analogous to those so often observed on the pericardium. In some cases, again, the apparent thickening of the endocardium depends on hypertrophy of the subjacent cellular tissue. In the healthy state, this membrane adheres so firmly to the cellular tissue that it can be detached only in very small shreds; whilst, in certain morbid conditions, on the contrary, we can easily raise it in considerable patches. On the valves, its adhesion is particularly firm, and it is scarcely possible to separate their two layers from one another, or from the fibrous tissue contained within them, save at their base, where they separate to receive the tendinous ring which borders the orifices. At this point, too, as well as in that already indicated, the external and the internal membrane of the heart are almost in contact with one another, and this forms an additional explanation of the frequent coincidence of external and internal inflammation of the heart. In its normal state, the endocardium is perfectly smooth and polished, but, by certain morbid affections, may be rendered rough and uneven; and, when in this condition, the friction of the column of blood over it will necessarily be increased.

To M. Bouillaud's original researches as the weight and volume of the heart in general, the absolute relative dimensions of its walls, cavities, orifices, and valves, we have already alluded. He conceives that Laennec's assertion as to the equality of the several cavities of the heart in the natural state is not strictly correct: for, in most subjects, he has found that the cavities of the right side exceed in capacity those of the left; as also that the auricles usually surpass the ventricles; and, with regard to the ventricles themselves, it has appeared to him that the difference is greater than could fairly be attributed to the distention of that of the right side, by the accumulation of blood in it during the last struggle of nature; and Legallois has observed a similar difference in the lower animals, even when killed by hemorrhage, though it is somewhat less marked than in those which have been put to death by asphyxia, or any other means that, like it, by embarrassing the circulation, favour such accumulation.

With regard to M. Cruveilhier's assertion, that the existence of hypertrophy of the left ventricle should be admitted whenever its walls have attained to the thickness of seven or eight lines, M. Bouillaud very properly points out a deduction which is to be made in regard to these cases, when, a state of general anæmia or marasmus having existed, the heart, though really atrophic, has, in order to accommodate itself to the diminished quantity of blood passing through it, become contracted on itself, and thus given to its parietes an apparent thickness of eight or even of ten lines; and, when the author just alluded to makes

five lines the lowest limit of hypertrophy of the right ventricle, (though, leaving this peculiar case out of view, *three* lines would, according to M. Bouillaud, have been nearer the mark,) a similar reservation is applicable. The mean weight of the healthy heart in the adult is stated by Cruveilhier at six or seven ounces, which approaches pretty closely to that assigned it by our author.

M. Lobstein, of Strasburgh, attributes the following mean weight and dimensions to the healthy adult heart, which in some particulars differ considerably from those given above, as well as from those attained to by M. Bouillaud, afterwards to be mentioned.

Weight of heart . . . . .	9 to 10 ounces.
Length from base to apex . . . . .	5 inches 6 lines.
Breadth at the base . . . . .	3 inches.
Thickness of walls of left ventricle . . . . .	7 lines.
Ditto at a finger's breadth above the apex . . . . .	4 lines.
Thickness of walls of right ventricle . . . . .	2½ lines.
Ditto at apex . . . . .	½ line.
Thickness of right auricle . . . . .	1 line.
Ditto of left auricle . . . . .	½ line.

M. Bouillaud is of opinion that the hearts from which some of these deductions were made could not have been in a natural condition; for the thickness of the right auricle, in place of being double that of the left, as in the above table, is really generally inferior to it; and a heart weighing ten ounces, if belonging to an individual of an ordinary size, must have been hypertrophied. M. Bouillaud weighed the hearts of thirteen subjects, in which, from the general habit, the previous state of health, and the mode of death, there was every reason to think they were in the natural state. The mean of all these weights was eight ounces three drachms; the maximum about eleven ounces, but that was in an individual of colossal size and very strong constitution; the minimum was but six ounces two drachms, but it was the heart of a boy of only sixteen years of age, whose body had not yet attained to its full degree of development. From these data he is led to fix the mean weight of the heart in the adult, from the twenty-fifth to the sixtieth year, at from eight to nine ounces. The weight of the heart in women is generally less than that in men; he has not, however, yet ascertained in what exact proportion. In his investigation, it is to the *absolute* weight of the heart he has alone had regard; but he alludes briefly to the experiments of M. Jules Pelletan, as to the difference of its *specific* gravity in different individuals, proving that the weight and the bulk are by no means always in a direct ratio.

With regard to the dimensions of the heart, out of seven cases examined by M. Bouillaud, the mean circumference, measured round the base of the ventricles, was eight inches nine lines; the mean length of the heart in nine cases, measured by a line joining the root of the aorta to the apex, three inches seven lines and a third; the mean breadth at base, measured in eight subjects, was three inches seven lines and a half; the mean thickness of the walls at the left ventricle at the base, six lines and a half; maximum, eight lines, minimum, five lines; the mean thickness of the right ventricle at the base, two lines and three fifths; maximum, three lines and a half, minimum, one and a half. Thus, in adults, the mean thickness of the left ventricle may be stated, in round terms, at seven lines, and that of the right at two lines and a half; or in the proportion of nearly five to two. In infancy no such great disproportion exists; and in the fetus the walls of the two ventricles are, as is well known, nearly equal in thickness. The mean thickness of the left auricle, measured in four subjects, was found to be a line and a half; the maximum two lines, and minimum three quarters of a line; whilst the mean of the right auricle was only one line; the maximum one and a half, and the minimum half a line; the parietes of the left thus exceeding that of the right by about one-third.

The capacity of the ventricles was not very accurately ascertained, but it may be roughly stated that, in their natural condition, they are of a size capable of holding a hen's egg; the left, however, being obviously a little inferior to the

right, as above stated. The right auricle also appears generally slightly to surpass the left in magnitude.

The mean circumference of the left auriculo-ventricular orifice, measured in three subjects, was three inches six lines and a third; that of the right, three inches ten lines. The mean circumference of the ventriculo-aortic orifice, as measured in four subjects, was two inches five lines and a half. The mean circumference of the ventriculo-pulmonary orifice, in the same individuals, was two inches seven lines and three quarters. Thus, it appears that the auriculo-ventricular orifices usually surpass the openings of the aorta and pulmonary artery; and that, of the two latter, the circumference of the second generally exceeds the first in a slight degree.

M. Bouillaud next proceeds to detail his measurements of the length and thickness of the several valves of the heart, which we have not room to notice at length here. He also gives a long list of the weights and measures of hypertrophied and atrophied hearts, for which we must refer the reader to the work itself. The weight of the largest hypertrophied heart he has met with was more than thrice the mean normal weight, and five times that of those in a state of extreme atrophy. The largest heart mentioned by M. Bouillaud, and which he compares to that of a calf, though taken from a woman of an extremely slight make, was found to weigh 688 grammes, or about a pound and a quarter. M. Lobstein speaks of one which weighed about two pounds, that is, 312 grammes more than the above; but it is possible that it was weighed previously to removing the clots of blood within it, which occasionally amount to about one-third of the gross weight. Of six hypertrophied hearts, the greatest circumference at the base was twelve inches; the greatest length, five inches three lines; the greatest thickness of the left ventricle, one inch one line; that of the right, four lines and a half. Of three cases of hypertrophy of the left auricle, the maximum thickness was only two and a half lines, or about a line more than in the normal condition; whilst in the right auricle, in the same morbid state, a somewhat greater difference was occasionally found. Of concentric hypertrophy, one of the most remarkable examples given was one in which the heart weighed about twelve ounces, and yet the right ventricle would scarcely have held a pigeon's egg, or the left have admitted the forefinger into its cavity; whilst in another case of hypertrophy, which was of the eccentric or true aneurismal kind, the heart weighed about fifteen ounces, the left ventricle was capable of holding an ostrich's egg, and the right was very nearly equally capacious.

Of atrophy of this organ, one of the most striking instances met with was in a woman who had died in a state of extreme emaciation from scirrhus pylori: the heart, which appeared much shrivelled, weighing only about four ounces (135 grammes); the left ventricle would hardly admit the little finger, and the right was very little larger.

As the heart of the human subject, when in an extreme state of hypertrophy, has sometimes been compared to that of an ox, the weight and some of the dimensions of the latter have, as a matter of curiosity, been inserted by M. Bouillaud, in a note. After it was separated from the great vessels, and all the blood had been carefully washed out of it, it was found to weigh nearly four pounds; the circumference at the base was eighteen inches; the length, seven and a half inches; the thickness of the wall of the left ventricle, one inch eight lines; that of the right, five or six lines; the right auricle, three lines, &c. In the duplicature of the lining membrane of its valves, there was found not merely fibrous tissue, but also some reddish muscular fibres, which were prolonged at the base of the valves into the fleshy substance of the heart: this was most obvious on the left side. The tendinous zones were very well developed, and at the base of the bicuspid valve there projected from beneath the lining membrane a sort of bony process, the base of which sank to the depth of an inch into the substance of the heart, widening out to the breadth of five or six lines as it descended. This, which M. Bouillaud seems to have mistaken for an accidental or morbid growth, is a natural structure, has been alluded to by Meckel and other comparative anatomists, and lately more fully described by Mr. Harrison, of Dublin.

The approximate results in respect to the mean weight and dimensions of the human heart, in the natural and morbid condition, which we have detailed above, though they are very important, and indicate great industry and zeal for science on the part of our author, are yet scarcely based on a sufficient number of individual instances to warrant our receiving them as settled standards of appeal; but it may fairly be expected that, when several observers, who possess an equally extensive field for observation, shall have instituted a similar series of experiments, and combined their results, such a standard, of some practical value to the morbid anatomist, may eventually be made out. In the mean time, even considered as approximations, they cannot fail to be valuable to the student of pathological anatomy; and we have therefore, at the risk of being considered tedious, given them in considerable detail. The details will be best appreciated by those most inclined to pursue such inquiries.

When speaking of the morbid anatomy of the heart, M. Bouillaud very justly censures that slovenly method of dissection, (now, we trust, almost extinct,) which consists in merely cutting the heart across, and from such a section attempting to appreciate its several lesions; instead of slitting up its several cavities in regular succession, and carefully examining their absolute and relative capacities,—the condition and quantity of blood within them,—the thickness of their walls,—the state of their orifices, valves, tendons, fleshy pillars, and lining membrane,—of their vessels; in short, of every thing which enters into their structure.

#### DISEASES OF THE HEART.

The part which immediately follows that which last occupied us consists of some general remarks on the diseases of the heart. In these the author examines, in succession, their precise seat and anatomical characters; their diagnostic signs, causes, nature, and classification; their progress, duration, and termination; their prognostics and treatment; and, finally, their complications with each other, as well as with diseases of other organs. Nothing is more rare than diseases of the *whole* heart: frequently it occupies but one cavity of the organ, or even but one tissue out of all those which go to form the walls of such cavity. The physiological characters or symptoms of diseases of the heart he considers at large, under the two heads of Local Signs and General Signs; and, in the investigation of the former, agrees with all other good modern observers in considering auscultation and percussion as the most valuable of all our resources, and next to these he places inspection and examination by the touch. He points out very forcibly the error into which many systematic writers on diseases of the heart have fallen, of ascribing to *all* its lesions indifferently certain secondary consequences, which are really attributable only to particular ones. Thus, some have erroneously ascribed to pure and simple hypertrophy of the heart those venous congestions and passive serous effusions which, so far from recognising for their cause such an increase of action as accompanies a true hypertrophy, depend, on the contrary, on the diminution of the force or moving power of the heart, or on a mechanical obstacle to the course of the blood through its cavities. We must admit, he continues, two principal modes in which secondary morbid phenomena are produced in cases of diseased heart,—namely, one which is altogether physical and mechanical, as in the case of displacement and compression of the lungs by an enlarged heart, or in that of passive congestions in a variety of organs, from induration of the valves and narrowing of the orifices opposing the free transmission of blood; whilst the other principle is purely sympathetic or vital, and is exemplified in the fever depending on inflammation of the various tissues of the heart.

The influence exercised over the circulation in general, and especially over that of certain viscera, (as the lungs, the liver, the spleen, and the brain) by particular diseases of the heart, is remarkably great; and these secondary or symptomatic affections have too often been mistaken for primary inflammatory diseases of the suffering organs, and occasionally even for those of a merely nervous character. We have thus ourselves known headaches from this cause, of such a degree



of intensity and so frequent occurrence as to render life miserable, exist from youth up to middle age, without their real source in disease of the heart having ever once been suspected, even by physicians of the first eminence, at least till the fatal termination was approaching, and the supervention of passive dropsies opened the eyes of the attendants to the true nature of the case.

The sympathetic effects connected with diseased heart vary according to the portion of this organ chiefly implicated. Thus, when the left ventricle is the seat of well-marked hypertrophy, the face is for the most part red and animated, and the eyes are brilliant; there is dizziness and confusion of head, and, towards the conclusion, formidable epistaxis, and occasionally even cerebral hæmorrhage. Whereas, if it be the right ventricle which is so affected, (a much rarer case,) slight spitting of blood, or occasionally even pulmonary apoplexy, ensues. The cause of the difference is obvious. If there be any mechanical obstruction to the circulation through the heart, on which soever side it may be situated, it will necessarily give rise to much disturbance in the arterial, venous, and capillary circulation generally: this will, however, vary much in degree and kind, according as the impediment is situated in the right side or in the left: thus, if it be in the left, the lung will feel the first effects of it, though no doubt it will subsequently extend its influence to the right cavities and to the veins which empty themselves into the right auricle. If the obstacle, on the contrary, be in the right side, the *venæ cavæ*, the veins of the liver, spleen, brain, face, &c., will be the first to suffer, giving rise to passive congestions of the parts just named. But it is erroneous, however, to state absolutely, as is done by some authors, that the effects just detailed are exclusively connected with affections of the right side; although they certainly manifest themselves much earlier here, and in a higher degree. M. Bouillaud lays much stress on mechanical obstruction as a cause of the above derangements of the circulation than Dr. Hope, though he readily admits that simple dilatation, hypertrophy, &c., may occasionally give rise to them. Testa has placed amongst the incidental consequences of diseases of the heart the destruction of the eyeball, depending probably on deep-seated derangement in the circulation of the capillaries of the part; as also gangrene of the limbs; and in the present work there are one or two cases illustrative of the latter, as it occurs in the advanced period of heart disease: but M. Bouillaud does not look upon either of these occurrences as its direct consequence. In the cases of gangrene, he has usually found a coagulum, in the artery leading to the part; and he looks upon this as the immediate cause of the affection.

*Causes.*—In his chapter on the Etiology of the diseases of the heart, though he by no means impugns the influence of the special causes to which they are by most writers attributed, he is of opinion that the fact that they may originate, like the disorders of other organs, under the influence of general causes, is too often lost sight of; for he is convinced that in these, and more especially in exposure to cold and the consequent inflammation, we shall find their chief source. The laborious and almost unceasing action of this organ; its sympathy with all the other parts of the body, so strikingly manifested in acute and chronic local affections, accompanied by fever; its liability to suffer from long-continued and violent muscular efforts, and everything which embarrasses the lungs, too stimulant a diet, moral affections, and a host of other causes so eloquently detailed by Corvisart, are facts which need only be mentioned to satisfy us that it is exposed to a greater number of deranging influences than perhaps any other organ in our system.

Corvisart, and still more recently an Italian writer, M. Schina, has dwelt very largely on the influence of the moral affections in the production of diseases of the heart; and we cannot agree with M. Bouillaud when he endeavours to limit their operation to the development of mere nervous disorders of this organ, excluding, in a great degree, from their range those of an acute or of an organic nature. We fully join him, however, in dissenting from Corvisart's assertion, that the heart is placed out of reach of the influence of sudden atmospheric changes; for it is matter of daily observation that pericarditis, for example, originates readily under the same external influences as a pleurisy or an acute rheumatic attack; and this is likewise the case, according to our author, in regard to inflam-

mation of the internal lining membrane of the heart; a disease which so often coexists, as already stated, with pericarditis, and a just knowledge of which, he thinks, is destined to work a complete revolution in respect to our notions on the pathology of the heart.

An hereditary predisposition to diseases of the heart is in some instances unquestionable, and has long since been sufficiently established by Morgagni, Senac, Corvisart, and others. Lanciani, in particular, mentions that a great-grandfather, grandfather, father, and son, were successively affected with aneurism of the heart; Albertini speaks of a woman and her five brothers, all martyrs to the same affection; M. Bouillaud says he has daily proof of the opinion being well founded; and we may add, that our own observation, (agreeing, we doubt not, with that of every experienced physician,) enables us to attest the same.

The chief object of M. Bouillaud's book, which seems to be to prove that the great majority of diseases of the heart originate in acute and chronic inflammations of its tissues, is very largely developed in the present section. He asserts that, before he had become possessed of numerous and exact records of cases of this kind, such as his work abounds in, and more especially of endocarditis, or inflammation of the inner lining membrane of the organ, he had but very confused notions on many questions relative to organic diseases of the heart; but that, when once he had obtained a collection of accurate facts bearing on the subject, and made them the object of his careful study, his eyes became as it were unsealed, and a new light burst in on him. That, in a very great majority of cases, the lesions alluded to have really an inflammatory origin, especially when occurring in the more vigorous periods of life, or when they have been obviously preceded, at some time or other, by acute symptoms, must, we think, be fully admitted by all those who take fairly into consideration the structure and pathological analysis of the parts affected.

With regard to the formation of a satisfactory classification of the diseases of the heart, much has been attempted, but little has been done hitherto. Nature conforms herself to no artificial arrangements, and diseases of the heart, even more than those of other organs, present themselves almost invariably in a complex form; two or more morbid conditions for the most part coexisting, and especially if the case offer itself to our observation at an advanced stage.

*Progress.*—It is a curious circumstance that the symptoms of organic disease of the heart are, to a certain degree, of an intermittent nature. This was alluded to by Corvisart, who adduces two instances of aneurism of the aorta simulating, from this cause, spasmodic asthma. Some later French pathologists, amongst whom we believe we may place M. Rostan, conceive that all cases of so-called nervous periodic asthma are merely symptomatic of organic affections within the chest. M. Bouillaud, on the other hand, thinks that the periodicity is not really the attribute of the organic disease, but is rather to be ascribed to the coexistence of the neurosis of the heart. However it is to be explained, the fact of the symptoms of heart disease being liable to frequent exacerbations or violent paroxysms is indubitable. These sometimes come on without any known cause; whilst, at others, they may be traced up to some excess in diet or exercise, to mental impressions, or atmospheric changes.

*Prognosis.*—In diseases of the heart, the prognosis has lost something of the gloomy characters it possessed in the time of Senac, and even so late as in that of Corvisart. Some of them are, no doubt, essentially and almost immediately mortal; such as rupture of the heart, sudden coagulations of the blood within it, and certain cases of syncope. Amongst those which are in their nature incurable, though not immediately mortal, are to be reckoned induration of the valves with considerable narrowing of the orifices, and certain instances of pericarditis and carditis in the chronic stage. The two last-mentioned diseases, whilst still in the acute stage, though very serious in their nature, are yet, when well treated, by no means so generally mortal as Corvisart supposed; and inflammation of the internal surface of the heart likewise, (an affection which was unknown to that distinguished physician,) though even more dangerous still, if neglected or mismanaged, is amenable to treatment, and in very many cases capable of being completely cured under the influence of active and judicious measures. Hyper-

trophy of the heart, when unaccompanied by any very considerable dilatation or contraction of its cavities, or serious lesion of its valves; simple thickening of the valves, without any serious obstacle to the course of the blood; and, finally, adhesions, and fibrous or cartilaginous patches in the pericardium, do not enter into the category of diseases necessarily mortal; for, with good management, the individuals labouring under them may have their lives protracted to a very advanced period. The importance of the functions of this organ, and the impossibility of placing it in a state of repose, will always necessarily render diseases of the heart proportionably much more dangerous than those of almost any other organ: still, in a very considerable number of instances, despondency is unwarrantable.

As the diagnosis of heart diseases has of late years made such considerable advances, it was only natural to expect that the treatment should have acquired greater precision, and have become proportionably more successful; and that it should become daily rarer for us to see chlorotic individuals, and others with merely functional derangements of this organ, subjected to bleeding and other prejudicial lowering means, where tonics and a nutritious diet could alone be of service; or the equally deplorable error committed of treating solely with antispasmodics the palpitations and dyspnoea of patients labouring under an organic affection. The peculiarity of M. Bouillaud's method in the treatment of inflammatory affections of the heart, (and we have seen how extensive a range he attributes to these,) consists in a very free use of antiphlogistic measures, ("émissions sanguines à haute dose,") by means of which, he assures us, he has been successful in an eminent and almost unexampled degree; having latterly been able to save almost all the patients labouring under such diseases, when they applied to him in their early stage. In looking to his cases, however, notwithstanding his assumption of originality in his treatment, the bloodlettings described in them do not strike us as being larger than those usually practised in similar cases in this country, ("trois à quatre palettes,"—twelve to sixteen ounces,) though they are performed perhaps at somewhat shorter intervals, and rather longer persevered in. Of the value of this method, within due limits, there cannot, we conceive, be a doubt, as well from its influence in reducing inflammation generally, as from its being the only method of which we are possessed of reducing the quantity of labour to be borne by this organ, and thus placing it in a comparative state of repose. Half measures, as he justly remarks, only suffer the disease to pass into a chronic condition, with all its unmanageable consequences, which tend to convert life into a lengthened and hopeless disease. He quite agrees with Corvisart in the propriety of limiting within very narrow bounds the employment of Valsalva's and Albertini's method in organic affections of the heart. In the efficacy of mercury alone, or in combination with opium, in controlling inflammation of an ordinary character, and especially that of serous membranes, and of limiting the effusion of coagulable lymph, preventing its organization and promoting its absorption, he does not seem to entertain that confidence which has long been so characteristic of British practice, and which is beginning to be felt latterly also in Germany. He is thus deprived of a powerful auxiliary at that period when bloodletting is no longer admissible. He is not ignorant of, or altogether sceptical as to the influence of this remedial agent, but he does not appear, in his cases generally, to have employed it extensively or vigorously.

The latter half of M. Bouillaud's first volume, and the whole of the second, are devoted to the description of the individual diseases which constitute the object of the work, each of which is illustrated by a copious collection of carefully-given cases; and each set of cases is preceded by some preliminary observations, and followed by a condensed history of the particular disease under consideration, an account of the actual state of our knowledge in regard to it, and the results of the clinical observations and experience of the writer himself. The cases of recovery, as being in some degree incomplete in an historical point of view, inasmuch as they are deficient in the pathological anatomy of the disease, are kept apart and reserved for the termination of each article. Cases of this kind are, as M. Bouillaud remarks, too much overlooked by most modern French writers.

*Pericarditis.*—Both Corvisart and Laennec, though so peculiarly distinguished

by their tact and sagacity in the recognition of diseases, speak emphatically of the doubt and difficulty usually experienced in their attempts at diagnosing this disease. The latter concludes his remarks on the subject by observing that pericarditis is a disorder, the existence of which, during the life of the patient, the most able physicians rather guess at than recognize. It is to the valuable memoir of M. Louis, which first appeared about twelve years ago, that we are chiefly indebted for the great advances which have recently been made towards the establishment of a correct and adequate diagnosis of this affection; and M. Bouillaud conceives that he has been able to contribute somewhat to the completion of this desirable object. Collin, Latham, and Stokes have likewise done good service in the same cause.

Our author has thrown his cases into groups, which are founded on the particular period of the disease existing at the moment of death, or rather on the precise character of the anatomical lesions discovered on dissection; a division which he thinks of more practical utility than the usual one, into acute and chronic.

His first group contains the cases of individuals who died in the period of inflammatory congestion, or in that of effusion or suppuration; the second comprises those in which the absorption of the coagulable lymph had commenced; whilst the third and last comprehends those in which the morbid product had been completely organized, and undergone a transformation into fibro-cartilaginous or osseous tissue. We must content ourselves with noticing the more general observations, although many of the individual cases are extremely interesting and instructive.

Amongst the chronic consequences of pericarditis, the most constant, judging from the cases, consist in morbid alterations of the muscular structure and dimensions of the cavities of the heart, (hypertrophy, dilatation, &c.,) and, above all, a diseased condition of the internal lining membrane and of the valves. Cases affording additional evidence to the same effect abound in the works of Corvisart, Tommasini, Hope, &c. There are still, however, writers who affirm that, in certain cases of simple chronic pericarditis, unaccompanied by any lesion of the valves or orifices, symptoms quite similar to those produced by a mechanical obstacle to the circulation occur. Our author has never met with such a one, and doubts altogether the correctness of observation on the part of those who advocate its possibility. He does not deny that a simple chronic pericarditis, even in the absence of any notable quantity of effused fluid, may offer some slight obstacle to the circulation and respiration, but asserts that any symptoms of this kind so arising are so much milder in degree than those depending on an internal obstruction to the course of the blood, as not to be capable of being confounded with them by any attentive and judicious observer. When the latter state of things, on the contrary, exists, it may, he thinks, be diagnosed with as much certainty as a stricture of the urethra, or any other simple surgical disease; whereas, the former is much more obscure, and often at first only recognizable from the previous history of the case.

The anatomical appearances found on dissection are detailed at considerable length. The thickening often ascribed to the pericardium in these cases is, for the most part, rather apparent than real, depending on the effusion of one or more layers of coagulable and partially organized lymph over its surface, or on the hypertrophy of the cellular membrane beneath it. The pressure of the effused fluid, if considerable in quantity, or that of accumulated false membranes, sometimes leads to an atrophic state of the heart,—an effect analogous to that produced on the lung by the long-continued pressure of a pleuritic effusion.

Concurrently with the morbid condition of the pericardium, the internal lining of the heart is in many cases red, and somewhat thickened, and that most conspicuously in the *valves*, which are often swollen and infiltrated, or else present fungoid excrescences on their free edge; and coagula of blood, of a date evidently anterior to death, are often found in greater or less quantity within the heart. The muscular tissue of the heart likewise is liable, as well as the serous, fibrous, and cellular tissues entering into its structure, to become hypertrophied in some instances, and soft and friable in others. The softened muscle may assume either a deep red or brownish colour, or else a whitish or pale yellow. It is the latter

of these two varieties which has alone been specified by Laennec, and compared by him to the effects which would be produced by maceration, to which it seems in fact to be in some degree owing; and M. Bouillaud remarks, that it is chiefly in those instances of chronic pericarditis where the effusion is almost entirely of a serous nature that it is observed. M. Désclaux, in several instances where he had produced inflammation of the pericardium by artificial means, on dissection of the animals so treated, found the internal membrane of the heart likewise red, and the valves (and more especially those on the left side) thickened, swollen, infiltrated, and as it were fungoid on their edges.

The diagnosis of pericarditis may now, according to M. Bouillaud, be formed with certainty in a great majority of cases. The following is a condensed account of the symptoms, physiological and physical, enumerated by him.

1. Pain, more or less acute, below the nipple, or towards the lower end of the sternum, occupying occasionally the whole præcordial region, and sometimes darting towards the axilla and left arm, and at other times towards the diaphragm, epigastric or hypochondriac regions, and especially that of the left side. This pain which is sometimes very acute and pungent, like that of pleurisy, is increased by percussion, respiration, and cough; it is sometimes so severe as to render it impossible for the patient to straighten the side, or even to lie on it. In many cases the pain is so obscure as almost to be overlooked, and is only complained of when pressure is made from below upwards in the epigastric region; and in some it is altogether absent. The coexistence of a very acute pleurisy, or of a violent articular rheumatism, has occasionally been sufficient to mask it entirely. Yet it is perhaps the *simplest* form of pericarditis which is the most commonly unaccompanied by pain, and which is hence the most frequently latent, as had been already observed by Laennec; who is here, however, opposed to Corvisart. When the disease originates in rheumatism, pain is sometimes not at all conspicuous, unless a pleurisy coexists, and then it is most violent when the pleuritic inflammation occupies the left side of the chest, and particularly the upper surface of the diaphragm.

2. The beat of the heart is generally increased in strength, and may be either regular or irregular, intermittent or tumultuous. Sometimes, however, the stroke of the heart is almost or altogether imperceptible, which seems to depend on the presence of a very profuse effusion of fluid in the pericardium, by which the sounds likewise are rendered distant and obscure. In one case of considerable effusion it was observed, that the place of the beat of the heart could be changed considerably by varying the patient's posture. When the period of organization is taking the place of that of inflammation, M. Bouillaud has sometimes observed a very singular phenomenon, not hitherto, so far as he knows, noticed by any one else; namely, the second motion of the heart is double, and accompanied by a peculiar, dry, hard sound (*craquement*).

3. The prominence of the præcordial region, pointed out by M. Louis, is a valuable sign, which our author has often had occasion to verify.

4. There is an increased extent of dulness on percussion in the præcordial region, which depends partly on the quantity of fluid effused, and partly on the inflammatory turgescence of the heart itself; but the former element has far the greater share in the production of this effect. This is a sign, however, which, like several of the others, can only be expected to be met with in a particular period of the complaint, as it diminishes with the progress of absorption: and in those cases where scarcely any thing but a little coagulable lymph is effused, this symptom will hardly, if at all, exist, or only in relation to the turgescence of the heart. In fine, it is only when there is a considerable effusion of fluid that percussion affords us much assistance in the diagnosis of pericarditis; and here, by altering the patient's posture, the level of the dull sound can sometimes be varied at pleasure. When the quantity of fluid is small, no dulness may be perceivable till we place the individual either erect or sitting.

5. Auscultation, till lately, has done very little for this disease. The sign pointed out by M. Collin, and compared by him to the creaking of new leather, is not admitted by Laennec in his second edition. Its very great rareness may account for this: until recently, as already mentioned, neither Andral nor Louis

had ever met with it. Within the last five or six months, immediately preceding the publication of the present work, M. Bouillaud has encountered it two or three times; so that from this and from Mr. Mayne's recent paper, in which the evanescent nature of the symptom is dwelt on, we are inclined to think that in many cases it has not been discovered, because not sought for with sufficient assiduity within the short period of its natural duration. It seems to our author to require for its production a peculiar degree of density in the false membranes which rub against each other, and he thinks it may sometimes also depend on the dragging of the adhesions. The sound of friction is very common, and occasionally imitates the *bruit de scie*, or *bruit de râpe*; and M. Bouillaud has himself met with the true bellows murmur in at least six or eight cases.

He does not assent to that part of Dr. Hope's explanation of the bellows murmur, which ascribes it to the increased force of the heart's action; for it is absent in many cases of very violent palpitations, and sometimes present when the heart's motions are comparatively feeble. He fully concurs with him, however, in thinking that it may occasionally be produced by swelling of the valves; being convinced that it depends, for the most part, on the coexistence of endocarditis, and in some instances on the fibrinous concretions within the heart, which are now known not unfrequently to accompany this lesion. The compression of the heart by a large quantity of effused fluid is, he thinks, likewise sufficient to give rise to it.

It is to the general or physiological symptoms of pericarditis that what has been said by authors of the uncertainty of its signs chiefly applies; their variability depending on the degree of intensity of the disease, the number and severity of its complications, &c. Thus the pulse, which is generally much accelerated, may be either large and accompanied with moisture of the skin; or small, hard, and irregular, the skin being remarkably dry. There is occasionally dyspnoea, and an insupportable sense of oppression and anxiety, jactitation, and sleeplessness, and in some instances delirium and convulsions. The face, which may have been pale and sunken at the commencement, if the patient survives a few days, becomes often of a livid or violet hue, and the limbs swell. The suffering induced is often exquisite. Mirabeau, who, as above stated, fell a sacrifice to it in its most violent and acute form, is said to have entreated his attendants to shorten his life and his tortures by opium. The cases in which there is the most vehement reaction are those which are complicated with inflammation of the pleuræ, especially of that portion of the membrane which lines the diaphragm. The accompanying dyspnoea, when it exists in a very aggravated degree along with faintness and syncope, seems frequently to depend on a large effusion of fluid into the pleuræ or pericardium, and occasionally also on polypous concretions in the cavities of the heart. Frequent vomiting, from sympathy of the stomach with the inflamed organ, is amongst the occasional symptoms of pericarditis; and, in some of the complicated cases just alluded to, M. Bouillaud is disposed to attribute its occurrence to the proximity of the inflamed pleura covering the diaphragm to the peritoneum, and to the reaction of the diaphragmatic nerves on those of the stomach.

None of the symptoms above alluded to, taken *isolatedly*, can be considered conclusive as to the existence of pericarditis; but, whenever an individual is suddenly seized with feverishness, oppression, and anxiety, and there is smallness, irregularity, and intermittence of pulse, together with pain in the præcordial region, extensive dullness on percussion there, and the sound of friction or creaking within the pericardium, we may affirm with confidence the presence of this disease.

*Chronic Pericarditis* is generally only the sequela of the acute form. Sometimes, however, pericarditis bears a chronic stamp from the very first, being unaccompanied by any notable degree of fever, and in many of such instances it is latent; though, if a sufficient degree of care be employed in examining them, they may generally be detected. Thus, if, in addition to the physical signs indicative of effusion, there be some degree of pain or uneasiness in the præcordial region, — a slow fever, with or without exacerbations in the evening and after taking food, — a general sense of oppression, — slight œdema of the face, which is occa-

sionally of a violet tinge, and swelling of the ankles increased by the erect posture, we may conclude the existence of a chronic pericarditis. The existence of adhesions of the pericardium to the heart is not rendered manifest by any diagnostic symptoms, as far as is known to our author. He has not hitherto succeeded in observing that species of undulatory motion which Sanders has asserted is perceptible to the hand applied to the epigastrium in such cases, and which is supposed by him to depend on the alternate drawing up and depression of the diaphragm, in consequence of the motions of the apex of the heart, now closely adhering to the pericardium. He does not at all agree with Corvisart in supposing that these extensive adhesions *must* derange the actions of the heart and diaphragm, and thus lead sooner or later to inevitable death. So frequent is the connexion of this disease with rheumatism, that he believes, as we have already seen, that, of any given number of acute rheumatic cases, at least one half present symptoms of pericarditis or of endocarditis, or of both united, at some period of their progress. The time of life most subject to it is that between ten and thirty. We agree with M. Bouillaud in thinking that Louis has certainly underrated the influence of cold as an auxiliary cause of this disease.

*Prognosis.*—The prognosis in pericarditis generally is considered by our author in much more favorable light than by almost any previous writer on the subject; and in this he appears to be justified by the frequent traces of it observed on dissection in individuals who have been carried off, long subsequent to its cessation, by other diseases; and he asserts that he has himself succeeded in subduing the majority of cases of it which have fallen under his care during the last few years; and amongst these successful cases there were even several where it existed in complication with pleurisy or pleuropneumonia. The average duration of the disease, when judiciously and successfully treated, may be estimated at from seven to fourteen days. Very violent cases of it may, however, prove fatal in little more than twenty-four hours. Those originating in rheumatism are generally the most obstinate.

*Treatment.*—His treatment consists chiefly in free and frequent bloodletting, both general and local. Thus, for example, in the case of an adult in the vigour of life, he orders, on an average, from three to four venesections, to the amount of twelve or sixteen ounces each, within the three or four first days; together with the simultaneous application of twenty or thirty leeches, or cupping to the extent of eight or twelve ounces during the same period. In very feeble patients, where bloodletting seems inexplicable, or has already been carried as far as is safe, we observe that he sometimes employs diuretics or purgatives, but only in that cautious and distrustful manner which characterizes the modern French school. When, notwithstanding all the measures put in practice, the disease unfortunately passes into the chronic stage, local bleedings are still occasionally employed, in combination with counter-irritants,—blisters, cautery, moxa, setons, or frictions with mercurial ointment, tartar emetic, or croton oil. A very low diet is at the same time observed, and tepid baths are employed. When all these fail to produce the absorption of the effused fluid, it has been proposed to attempt the relief of the patient by means of a surgical operation. M. Bouillaud discusses the operation more at large when treating of hydropericarditis. When the motions of the heart are irregular and tumultuous, and hypertrophy of this organ has supervened, digitalis deserves a trial; but, when atrophy of the heart has been induced by the presence of the effused fluid, the employment of the same remedy might be attended with dangerous consequences.

We cannot quit the subject of treatment without once more protesting against his almost total neglect of those potent auxiliaries, especially in the early stages of the disease, calomel and opium, as there are few inflammations over which their influence has been more satisfactorily made out than in that under consideration; nor are we inclined to think that he does justice to the virtues of the solution of tartrate of antimony, as employed by Laennec and others in serous inflammations, and which, in some of the cases even in the work before us, (the 31st and 32d, for example,) seems to have been productive of signal benefit; whilst, in cautious hands, it very rarely induces that dangerous irritation of the mucous membrane of which he is so apprehensive: and, when we take fairly into con-

sideration the comparative degrees of danger attendant on inflammation of a serous membrane and that of a mucous one,—the importance of the organ enveloped in the former,—the difficulty of getting rid of the effusions by which nature here endeavours, though imperfectly, to relieve herself,—and the dangerous nature of the sequelæ, we become reconciled to incurring the risk which must always be more or less connected with the employment of so powerful an agent. It is, however, chiefly in the very earliest stage that we are disposed to place much reliance on it.

Of the results of his treatment our author gives the following summary. Of eighteen cases of acute pericarditis, twelve were cured, and six ended fatally; but, of these last, three were not treated on his recent system of very free blood-letting, and, of the remaining three, one died of tetanus, quite independently of the pericardial inflammation; so that there were only two deaths to set off against twelve recoveries; and, of these two, one was complicated with a most violent pleurisy, together with pneumonia, splenitis, and erysipelas of the face; and, on dissection, the pericarditis was found to have almost entirely disappeared. In the other case, complication likewise existed. From all this he thinks himself justified in concluding that simple pericarditis would hardly ever be fatal, if early and properly treated.

### CASE OF CHRONIC HYDROCEPHALUS.

#### TREATED BY TAPPING.

At a meeting of the Medical Society of Augusta, Ga., Dr. Dugas related the following interesting case of chronic hydrocephalus, which he had treated by tapping.

This was a male child, born without accident, and enjoyed apparent good health until one month old. His head was then perceived to increase in size more rapidly than is usual in health; and subsequently, the cranial bones separated, the eyes became spasmodically turned downward, and at four months of age the child experienced slight general spasms, which in a few days amounted to convulsions. He appeared in other respects perfectly well, was fleshy and had been subjected to no treatment whatever. The circumference of the head was now twenty-four inches, and the fluctuation could be distinctly felt at the forehead, which was puffed up by the contained fluid. In this condition he had found the patient, on the 25th of June, labouring under convulsions which had commenced several hours before. Dr. Antony happening to be present, it was at once determined in consultation, to draw off a portion of the effusion; but having no more suitable instrument at hand, Dr. D. made the puncture with a couching needle, penetrating about one inch deep, in the left angle of the fontanelle. On withdrawing the needle, an ounce and a half (℥iss.) of limpid yellowish fluid oozed out, and no more could be obtained. The head was then bandaged; the convulsions continued during the operation, and two or three hours after.

On the fifth of July, the operation was repeated with the same instrument, and the application of a cupping glass, when ℥ij. more were drawn.

Aug. 12.—Head had very much enlarged, and on the use of a very small trocar, made expressly for the purpose, ℥vij. of fluid were removed.

29.—Head larger than previous to the last operation. Drew off ℥xi.

Sept. 12.—Head full, but not distended strongly. Drew off ℥xv.

30.—Head again filled. Drew off ℥xiiss.

Oct. 16.—Drew off ℥xiv.

Dr. D. remarked that the convulsions subsided shortly after the first operation, and did not return, except very slightly, a short time before the third and fifth puncture, although the accumulation continually increased. Indeed his general health appeared unimpaired until the 15th October, when he became dull and stupid. The stupor gradually increased and he became insensible of the nipple when put into his mouth. On the 16th he appeared as if in a profound sleep, and had swallowed nothing for two days.



After the removal of the  $\text{Æxiv}$ . on that day, he again readily noticed and swallowed several teaspoonfuls of milk poured into his mouth. He expired quietly on the 18th October.

The operations were never attended with the least change of pulse, nor symptoms of prostration—the only visible effect being the subsidence of the tumefaction, and of the tendency to spasm. Iodine, calomel, bandages, &c. were prescribed, but never attended to from the unwillingness on the part of the mother to annoy the child, as she thought, unnecessarily. The fluid was, after several of the operations, exposed to heat, without coagulating in the least.

The Dr. then gave the following full and minute account of the autopsic examination.

*Autopsy.*—The cranium was opened longitudinally, by an incision made in the membranes connecting the two sides of the frontal and the two parietal bones. The brain was found expanded like a sac, lining the dura mater, and filled with fluid, which did not escape until the brain was punctured. The convolutions were entirely unfolded, and the walls of the *sac* thus formed were about a line or two thick. The corpora striata and thalami were not affected, and the third ventricle was nearly normal; the fornix, velum interpositum and plexus choroides existed; the septum lucidum was not found. The corpus callosum could not be recognized, although the cerebral substance forming the walls of the sac was as firm as usual at this age. Cerebellum, normal—as also the medulla oblongata and encephalic nerves. The membranes presented nothing peculiar, save a great want of blood in the vessels of the pia mater. The inner surface of the *cerebral sac* resembled very closely a healthy mucous coat of the stomach. It was in some places covered with thick flakes resembling dense mucus; some of these were yellowish, some brown, others of a cream colour and like thick pus. The yellowish patches were at the bottom of that portion of the sac corresponding to the anterior lobes of the brain, and were not very unlike the appearances left after the absorption of apoplectic effusion. The left hemisphere being the first opened, permitted the escape of the fluid contained in both, after which, on looking into the right cavity through the hole of communication with the left, a kind of longitudinal septum, though lacerated, was seen hanging from the upper part of the sac and reaching its floor. It resembled the cineritious substance, but was so pulpy as to be readily torn and thus to prevent a satisfactory examination. It may possibly have been formed by flakes analogous to those already alluded to.

On examining that part of the sac which corresponded to the external marks left by the punctures, the cicatrices of the seven perforations were distinctly seen in the cerebral substance, which at this place with its other membranes slightly adhered to the dura mater.

The contained fluid measured sixty-four ounces, was limpid and of the colour of pale urine.

The above case, although unsuccessfully treated, may, by confirming the practicability and harmlessness of tapping the brain, lead to its more frequent trial. The plan has proved successful in one or more instances, and therefore merits more attention than it has hitherto received. In this case the brain was punctured seven times, and sixty-three ounces of fluid drawn off, yet not the slightest unpleasant effect ever followed the operation.—*Southern Med. and Surg. Jour.*

#### FOURTH ANNUAL REPORT OF THE MASSACHUSETTS LUNATIC HOSPITAL.

From that portion of the Report which emanates from the Trustees, submitted to the Governor and Council, it appears that:—

“The whole number of patients received into the hospital since its establishment is 510; that the whole number which have been in the hospital during the past year is 244; 125 of these having been received during the year, and the remainder continued from former years. Of these 125, 117 were committed by the courts, leaving only eight private patients received during the year. 106 have

been discharged during the year, leaving 138 in the hospital at the end of the year. Of the 106 who have been discharged, 57 were cured, 15 improved, eight have died, and 24 were discharged by the Trustees for want of room, under the provisions of the statute.

Of the patients cured, the proportion of recent cases, that is, of less than one year's duration, has been 84 and 1-5 per cent.; while of those of longer duration the proportion has been only 18 and 2-3 per cent. including those discharged for want of room, as all of the latter, with a single exception, should be put down in the class of incurables. Of those who remained at the end of the year, 11 only were recent cases, while 54 of this description had been received during the year, and these 11 are considered by the Superintendent as curable. A more extended view of this branch of our subject will show that of the 161 cases of less than one year's duration admitted into the hospital since its establishment, 132 have been and 11 more probably will be cured, 10 have died, six have been removed before the effect of the remedies applied had been sufficiently tested, and only two have been left to become old cases. It further appears that in the older cases, varying from one to thirty years and upwards, the chance of cure is nearly in an inverse ratio to the duration of the disease.

It further appears, as far as can be ascertained from the examination of the books of the Institution, that of the whole number of patients admitted to the hospital, there have been supported by themselves, or friends, 251; males, 139; females, 112. Supported by the towns, 179; males, 106; females, 73. State paupers, 73; foreigners, 52; from other States, 21. Satisfactory evidence of the birth and former residence of the remaining seven could not be ascertained.

An abstract of the report of the justly celebrated Esquirol, of the royal institution of Charenton, near Paris, contains the following particulars. The results are the more interesting, as this excellent public charity is of a character nearly resembling the State Lunatic Hospital of Massachusetts. The report is for the eight years next preceding the year 1834.

Esquirol found in the hospital at the commencement of the period above-mentioned, 492 patients. Admitted during the eight years, 1557, making 2049. Of this number, 518 recovered; 546 died; 514 discharged not cured; and 471 remained. He makes his estimates of cures on the admissions during the eight years, viz. 1557. The number of cures 518, is about 33 1-3 per cent. Estimate of deaths on the whole number, 2049. 546 deaths are 26 1-2 per cent.

The State Lunatic Hospital has received 510 patients. It has had 28 deaths, which is 5 1-2 per cent. It has discharged 372. Its estimate of cures is upon the discharged, about 53 1-2 per cent.

If the estimate of cures in the French Hospital were made in the same manner, it would not, as will be perceived, materially alter the per centage.

Esquirol's recoveries of the whole number in that Institution, including incurables, is 25 1-4 per cent. or 518 of 2049. The recoveries in the State Lunatic Hospital of all the patients, is 38 4-5 per cent., viz. 198 of 510.

Both Institutions contain a large proportion of incurables."

Were it possible to republish in the Journal the tabular statements of Dr. Woodward, every reader would be convinced of the unwearied exertions of that officer, and of his peculiar fitness to manage an institution like the one confided to his care. From these statements it appears that of the patients who have been admitted, 283 were single, 173 married, 30 widows, and 24 widowers. Of those under 20 years of age, there have been 58; 27 males, 31 females. From 20 to 30, 155; 91 males, 64 females. From 30 to 40, 125; 75 males, 50 females. From 40 to 50, 56; 28 males, 28 females. From 50 to 60, 32; 19 males, 13 females. From 60 to 70, 7; 6 males, 1 female. From 70 to 80, 3 males. Unknown, 24; 15 males, 9 females.

Following these, Dr. Woodward has appended a series of facts and practical observations, deserving the close attention of physicians as well as philanthropists and statesmen. His reasonings upon the subject of religious instruction, and its happy influence on the distracted mind, are calculated to enlist the highest sympathies of our nature.—*Boston Med. and Surg. Jour.*

## HOSPITAL STATISTICS.

*Admitted at the Massachusetts General Hospital, from Jan. 1, 1836, to Jan. 1, 1837.*

		Males.	Females.	Total.
Patients paying board	- - -	200	61	261
do. do. part of time	- - -	19	11	30
do. entirely free	- - -	113	81	194
Whole number	- - -	332	153	485

*Discharged during the same period.*

	Males.	Females.	Total.
Well	158	66	224
Much relieved	87	25	103
Relieved	31	21	52
Not relieved	37	18	55
Died	31	13	44
Unfit	0	2	2
Eloped	2	0	2
Whole number	337	145	482

Proportion of deaths to whole number of results this year—1 in 11, nearly.

The free patients, though admitted in less numbers, have occupied on the average about 5-8 of the ward beds. It follows that they remain longer, and the difference is—

Average time of stay of ward-paying patients, 3 1-7 weeks.

do. do. do. free do. 5 5-7 do.

*Analysis of Patients.*

	Free.	Paying.
Males..... Sailors	10	21
Mechanics	36	58
Teamsters, drivers, &c.	9	11
Farmers	9	10
Clerks, traders, &c.	6	23
Labourers	47	41
Minors	10	5
Domestics	5	12
In private rooms	-	37
Females... Domestics	57	29
Wives	14	12
Seamstresses, tailoresses, &c.	13	15
Spinners	1	3
Minors	7	7
In private rooms	-	2

It appears from this analysis, that more than one quarter of the whole number of free patients were female domestics, and nearly another quarter labourers, of whom about 5-6 were Irish.

The annual expenses of 1836 were \$17,950 25. After deducting from this the charges of repairs, grounds and contingencies, there remains a sum which makes the weekly expense of each patient, \$5 84.

That portion of the report which especially relates to the McLean Asylum for the Insane, is, as usual, a very curious and valuable document. It shows the advancement which is making in the rational, if not philosophical management of lunatics, who from the earliest ages have had their miseries aggravated, and their aberrations confirmed, by the harsh treatment which was meted out to them. Surely it is a modern discovery, which restores the insane to soundness

of mind and health of body, by the same course of moral culture by which the sane are elevated in the scale of humanity. Yet it is true that the law of kindness, the force of example, and the exercise of benevolence towards the most hopeless maniac, subdues the violence of rage; and if they are not ultimately restored to the exercise of reason, their physical condition is so ameliorated, that charity is encouraged to hope well for them. The multiplication of these institutions in our country, reflects the highest praise on the innate philanthropy of the people who are doing so much for those who were once scarcely considered to have claims upon the world for its common comforts. They were pitied, but not relieved, for the reason that they were falsely supposed to be beyond the reach of moral influence.—*Boston Med. and Surg. Jour.*

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## RHINOPLASTIC OPERATION.

By J. Mason Warren, M. D.

THE history of the patient who was the subject of this operation, we shall give very briefly, as follows.

J. T. 28 years of age. Three years ago last spring, while playing very roughly with one of his companions, he received a violent blow on the nose, which dislocated the cartilage, driving it at the same time over to the left side. Some inflammation came on in the nose at the time of the accident, which very shortly subsided; and as he was out of town, and at a distance from medical advice, nothing was done to replace the cartilage, which remained in the situation into which it had been driven by the blow.

In the following spring, while pursuing his ordinary occupations, a small red spot appeared on the right cheek just below the eye; this very soon increased in size, the inflammation gradually spread, first attacking the lip, and from thence extending to the nose, which became red, swollen, and finally ulcerated.

It will be unnecessary to go further into the details of the case; suffice it to say, that in the course of eighteen months the whole nose, cartilages, septum, bones, &c. were successively attacked, and finally completely destroyed. The ulceration had also extended to the cheek of the opposite side. Subsequently to this, cicatrization gradually took place, leaving the patient in the state in which I saw him, six months after his recovery from the disease.

At this period, having accidentally come across a description of the Taliacotian operation in an old magazine, he applied to know whether any thing of a similar kind could be done to remedy his frightful deformity. The following was his state as he appeared on the first examination.

The nose, as described above, had entirely disappeared, leaving in the place it originally occupied an opening about an inch in diameter, bordered by a firm cicatrice; the septum of the nostrils was destroyed, and the two nasal cavities thus thrown into one; externally a small cicatrix descended from the lower and left edge of this opening to the angle of the mouth. In the course of the disease the four front teeth had been lost, and this, together with the absorption of the alveolar processes, had caused a sinking of the upper lip, which had fallen an inch below the level of the lower one. An opening also existed between the lip and upper jaw, through which a probe might be passed from the mouth into the nasal cavity. The sense of smell was quite lost, and he was subject to an occasional running of the tears over the face, arising undoubtedly from the too sudden contact of the air with the lachrymal ducts.

A thorough examination of his case having been made, and finding there was no positive obstacle against the possibility of the success of an operation, the difficulties of such an operation as would be required were distinctly stated to him, the improbability of its succeeding so as to restore the organ in such a manner that the deformity should not be known, that the new nose might become very much flattened, and perhaps on the appearance of cold weather gangrene might take place, and finally, that even his life might be endangered by it. I

felt it my duty to state the case plainly, having seen all these accidents occur from the operation, and death in two cases being the consequence, from severe erysipelatous inflammation of the scalp.

Notwithstanding all these objections, he said that he was ready to incur any risk which would give him the least chance of having the deformity under which he laboured obviated, as life in his present state was hardly desirable.

His case was certainly a hard one. A young man, in the prime of life, in other respects of a good face and appearance, was, by this frightful calamity, not only entirely cut off from society, but prevented from gaining the means of subsistence.

Having determined to submit himself to an operation, it was thought expedient to delay it a few weeks, in order to watch the case a little, and prepare him for it by a course of diet and regimen.

At the end of six weeks his health had materially improved, and as he still persisted in the determination of having an operation performed, preparations were made to do it as soon as possible, as on account of the approach of cold weather, no time was to be spared. At this period he was seen by my friend Dr. Peace, of Philadelphia, who was present with me at one or two operations of the kind practised by Dieffenbach in Paris, and he declared, as his opinion, that the appearance of the patient offered every chance of success. The favourable circumstances were—the healthy state of the integuments surrounding the opening of the nasal fossa, the great height of the forehead, the whiteness and delicacy of the skin, and, added to this, the good state of his health. All the preparations having been made, the operation was performed on the seventh of September.

A piece of pasteboard, cut in the shape of the letter V, that is, of a triangular form, and with a projection from its base, corresponding to the columna of the nose, was placed upon the forehead, and a trace made around it with the nitrate of silver; this being used in preference to ink, as recommended by Lisfranc, in order that it might not be liable to become effaced by the blood. A trace was also made around the opening of the nasal fossa, at the points where it would be necessary to remove the integuments for planting the new skin taken from the forehead. This was done the night previous, in order to prevent any undue delay on the day of the operation.

All unnecessary articles of clothing being removed, the patient was placed on a table in a recumbent position, his feet towards the window, and the operator behind so as to have the full command of the head. The traces made by the nitrate of silver were about two-thirds of an inch apart between the eyebrows, each side of the triangular portion of skin was three inches and a quarter in length, with a base of three and a half inches, and the projection for the columna of the nose, which was to be taken entirely from the scalp, previously shaved, was an inch and a half long and two-thirds of an inch wide.

The head being firmly supported by two assistants, the incision was commenced between the eyebrows, and the flap of skin dissected up so as entirely to isolate it from the skin of the forehead, except where, for the purpose of nutrition, it was left adherent at the root of the nose. The incision on the left side between the eyebrows was extended a little farther down than on the right, the better to facilitate the twisting of the flap. This incision included the skin, subcutaneous cellular tissue, and a portion of the occipito-frontalis muscle, care being taken not to raise the periosteum, from fear of necrosis.

The flap thus dissected and twisted round to the left side, was carefully wrapped in a compress of linen cloth, and before the operation was proceeded farther in, attention was given to diminishing the large wound made in the scalp. Little hemorrhage had taken place, and the temporal arteries which had been cut, very soon retracted and ceased bleeding. The angles of the wound were first brought together by the twisted suture, two pins being employed on either side. Its edges between the eyebrows were also approximated in a similar manner; by this means the wound in the forehead was diminished at once to less than half its original size; it was still farther reduced by the use of a few strips of adhesive plaster, and a little scraped lint filled up the remainder of the wound.

Some lint spread with cerate was spread over the whole surface, a pledget, and the whole secured by a bandage round the head.

The next object was to fix the borrowed skin in its place. In order to do this, it was necessary to freshen the borders around the opening of the nasal fossa, the traces of which, as stated above, had been previously made with nitrate of silver. For this purpose a short narrow knife, somewhat similar to a cataract knife, was used, and a strip of integument a third of an inch in breadth, removed, including all that portion which had been at all indurated during the cicatrization of the ulcerations. The knife was also passed between the lip and upper jaw, in which existed, as before stated, an opening large enough to pass a probe, and the adhesions between the two, for the space of an inch, entirely cut away. This was done for the double purposes of giving the columna of the nose a more deep and firm adhesion, and, in the inflammation which would subsequently ensue, to close up the unnatural communication between the mouth and nasal cavity.

The flap was now brought down into its place, its angles a little rounded with the scissors, the better to simulate the alæ of the nose, and the whole secured in its place by pins and points of the interrupted suture. From that portion of the skin which was to form the columna of the nose, the epidermic side was pared a little, so that it might form an adhesion not only underneath to the jaw, but on its sides to the quadrangular wound made for it in the upper lip.

A little scraped lint was now placed under the ends of the pins, and a strip of oiled lint introduced into each nostril to prevent adhesion; another strip was placed upon the nose to preserve its temperature. The dressings were secured by a band of adhesive plaster fixed to the forehead above, and partially divided in the middle so that it might descend on each side of the nose to the lip.

During the whole of this long and painful operation the patient kept up his courage, and not a cry was uttered, nor the least struggle made that could at all impede the motions of the operator. Not much blood was lost, and his strength was so little exhausted that he was able to run up stairs to his chamber. He was ordered to go to bed immediately, to keep perfectly quiet, and a watcher left with him, who had directions, in case of his falling asleep, to prevent him from either rolling over on his side, or raising his hand to the nose so as to derange the dressings; also to wake him immediately should he breathe through the nose, To have arrow-root or gruel and lemonade, for nourishment.

On visiting him in the afternoon he was found comfortable; the new nose was warm, and had bled a little from the edges which formed the nostrils, both showing the circulation was not at all impeded.

Sept. 10th. Passed a good night, slept well, pulse seventy-nine, complains of no pain, the nose of about the natural temperature. The gentleman who watched with him thinks that the lint on the right side of the nose was occasionally raised a little during expiration, when the patient slept soundly; he awoke him once or twice on this account. A purgative was ordered of the sol. sulph. magnes. and liquid farinaceous diet. A piece of cork was confined between the teeth, so as to keep the mouth open, it being hoped that this might prevent him from closing his lips during sleep and breathing through the nose.

11th. Quite as well, passed a quiet night, has a good appetite, pulse eighty. Watcher says that he occasionally made a motion to raise his hand to the nose, but, as if instinctively aware of the impropriety of it, withdrew it again without touching the dressings. The introduction of the cork into the mouth had entirely effected its object, by preventing the passage of air through the nose.

12th. The first dressing took place four days after the operation, and the following was found to be the state of the parts.

The dressings on the forehead, after being well soaked were first removed. The angles of the wound were found to have united throughout, so that two of the pins were at once dispensed with. Union had also taken place in its lower part, just above and between the eyebrows; the remainder of the wound, that is, its central part, in which union by the first intention could not take place, was suppurating well, and filled with healthy granulations.

The nose was next attended to. Upon the lint being removed, which had become very much hardened and caked in by the coagulated blood, it was found

that entire union had taken place on both sides. The alæ of the nose and lower edges could not easily be seen without making use of two much violence in removing the dressings, which at present was not thought necessary. The columna was curved inwards, and the sutures concealed. The nose was of the natural color and temperature, and the circulation through it seemed uninterrupted.

Two strips of lint dipped in oil were laid over the cicatrix on each side of the nose, and no other dressings used. The patient was allowed to sit up a little, and to take any article of food of the liquid kind he might fancy.

On the 13th he was quite as well, with the exception of a little œdema of the upper eyelids, arising, undoubtedly, from the pressure of the bandages and other dressings on the forehead. One of the pins was removed from the forehead on the 13th, and another, the only remaining one, on the following day. The dossils of lint which had been placed in the nostrils still remained there, firmly caked in by the drying of the pus, blood, &c. These were not removed until the 16th, when their places were supplied by two pieces of hollow sound. Some difficulty was found in the introduction of the tube into the right nostril, which had become partially filled with granulations.

On the 14th a quantity of hair began to appear on that portion of the skin forming the columna of the nose, which, as will be remembered, was taken from the scalp; this hair, from time to time, required to be removed with the scissors. He was put upon a nourishing diet, with the caution to use the jaws as little as possible. He stated that occasionally, when he swallowed, he had a sensation as though he would "swallow his nose."

15th. The remaining pins were removed from the side of the nose, and the two sutures which confined the alæ; and on the 17th, ten days after the operation, the two ligatures, which confined the columna in its place, were also removed.

At this period, the following was the state of the parts. The wound in the forehead, from the adhesion by the first intention which had taken place, and subsequent contraction, had diminished to a third its original size, and the small triangular space which remained, together with that portion of the scalp from which the columna of the nose had been taken, was filled with healthy granulations. From the wound to the root of the nose was a linear cicatrix two inches in length, and continuous with the cicatrix on the left side. Adhesion of the integuments had taken place on both sides of the nose; at the right alæ, however, the union was not quite so perfect as at the left; that is to say, the whole thickness of the skin did not appear to have united. To assist the union, the skin of the face which lay under it was slightly scarified with the point of a lancet.

The columna of the nose was a little curved backward, and its edges had retracted inwards upon themselves. The inside of the nose was suppurating well, and at its upper part adhesion seemed to have taken place between the two bleeding surfaces which had been opposed to each other. The tip of the nose was well defined, and its edges were curved inwards so as well to simulate the natural appearance of the alæ, and just above the alæ, apparently from atmospheric pressure, a depression was taking place, forming their superior boundary. This was assisted by the patient making an occasional pressure with his fingers at these points. He feels well, has a good appetite, and sits up all day. He breathes freely through the tubes placed in the nostrils, which require to be daily removed in order to clear out any obstructions which may collect in them.

At the end of a month the wound in the forehead had contracted to about a quarter of its original size. Adhesion of the nose was perfect at all its points. The openings of the nostrils were regularly rounded, and simulated well the natural appearance. The tip of the nose is well preserved, and a regular curve takes place from its root to the end of the organ.

At the end of six weeks he was able to go out and walk about during the evening, but as the weather became cold he was advised to confine himself to the house, as cold evidently had a very great effect in retarding the cicatrization of the wound in the forehead. By reference to the second figure on the plate\* which

\* Three drawings of the face accompany the article in the Boston Medical and Surgical Journal.

accompanies this paper, a pretty correct idea will be formed of the state of things six weeks after the operation.

At the end of the two months it was thought time to proceed to the second operation, which was required to remove the twist existing at the root of the nose. It will be easily conceived by referring to the plate, that underneath the pedicle which connected the nose with the forehead, a small portion of sound skin existed, and that of course no adhesion had taken place between this portion and the pedicle lying over it. The method usually adopted by operators has been to cut the pedicle, after sufficient union of the nose has taken place below to justify the separation of it from its source of nutrition, and to fix it down at the root of the nose, in a transvers incision made for it at that point.

To this method there are some serious objections. First, the danger of inflammation in separating the pedicle; second, of sloughing of the organ on the vessels being cut which have hitherto supplied it with blood; and lastly, the very perceptible transverse cicatrix left after the operation. The method resorted to in the present case is liable to none of these objections, except, perhaps, the first one, in which the danger is much diminished.

This operation was as follows. An incision was made, commencing at the internal angle of the eye, and extending to that part of the base of the nose where adhesion had not been able to take place; a corresponding incision was also practised on the pedicle. The skin being well dissected up from its adhesion, a small portion of integument was removed from the upper angle of the wound, where it had become wrinkled from the twist in the pedicle. The edges were brought together by three points of the interrupted suture. The same operation was to be performed at a future day on the other side, where, however, the opening was of about half the size, and not so perceptible. Union took place, throughout, by the first intention. Some trouble was experienced, however, by the formation of a small abscess in the new cicatrix, when suppurated and discharged itself.

The third drawing, executed four months after the operation, when the cicatrization had become complete at all points, gives a very good idea of his present appearance. He now declares himself entirely well, no secretion takes place from the nostrils, and on looking into those cavities a new skin is found to line them throughout. The nose itself has contracted gradually, so that by the first contraction of the integuments, and the subsequent contraction from suppuration, it has decreased to almost two-thirds the size of the flap which was taken from the forehead. Contraction also seems to be going on in its longitudinal axis, so that the distance between the tip of the nose and the mouth, daily increases. This will be much more perceptible, and the whole physiognomy of the nose much improved, when the four front teeth, which have been lost, are replaced. This will bring out the under lip, and at the same time raise the tip of the nose. The cicatrix in the forehead has become very small, and is gradually assuming the color of the surrounding integuments. The scalp from which the columna was taken is lost in the hair. The nose is quite firm, of a good form, and the cicatrix on each side hardly perceptible; at the root of the nose on the left side, and at that portion which formed the pedicle, a small fissure still remains, which is for the present concealed by a strip of court plaster.

The health of the patient has never been better, his sense of smell is returning, and the tears no longer run over the face, and he, as well as his friends, congratulate themselves both on the moral and physical effects of the operation. He is now able to make his appearance during the daytime, which he has not done before during the last two years, and no person would observe anything remarkable in the nose, without a minute examination, when it would be difficult to explain the remarkable anatomical changes which have taken place.

*Remarks.*—In the present instance, no particular suffering was observed by the extension of the incision down between the eyebrows; and in case of any difficulty of this kind, the complete command in which the patient was held, from the position adopted, would have prevented any of the evils complained of by M. Labat.

One of the greatest difficulties of the operation, and that which, in its consum-



mation, occupied the most time, was the passing of the pins which were to close the wound in the forehead, and confine the new nose in its situation. To remedy this as much as possible, the pins to be employed, which were the long pins, generally used by naturalists, were previously sharpened; and for introducing them, a little instrument was constructed, somewhat similar to the aneurismal forceps of Dr. Physick, with a small groove to receive the head and upper third of the shaft of the pin. With this instrument the pins were readily seized, and pushed through the skin, and the ligature being applied, their ends were cut off by the scissors or cutting pliers.

At that part of the flap which was to simulate the alæ of the nose, as it was necessary that the integuments should be directed inwards, the pins, of course, could not be used, and here a plan recommended by M. Labat was adopted, which was followed by partial success. A thread being passed first through the integument of the face, and then through the flap, at about two lines distant from their edges, the ligature was so tied as to produce, as it were, a fold at the point; and the better to effect this object, a small piece of adhesive plaster, rolled up into the form of a cylinder, was confined under the threads, so as to make a strong compression on the wound and to force the edges into their places. This succeeded completely on one side; on the other, however, the union, at first, was not so entire, the skin adhering only by about half its thickness.

During the whole of the treatment, it was necessary to keep the openings to the nostrils distended by small tubes. The substance which seemed to answer the best for this purpose, was a portion of the barrel of a quill; the end which was to remain in the nose, being stopped up with a little melted sealing wax, and a small aperture cut in the side through which the air could freely pass. These were ingeniously constructed by the patient himself, who, after a time, was able to manage them without difficulty. The tendency to contraction at these points was very great, so that at one period, the tubes being left out during the night, it required considerable force to replace them.

From the new nose being formed entirely of skin, it will perhaps be supposed, that the integuments composing it are flaccid, and the form of it easily destroyed. This, however, from reasons easily appreciable, is not the case. The integuments of the scalp being naturally of great thickness, by the suppuration which took place from the inner side were made to assume a firmness almost similar to fibro-cartilage; and at the root of the nose, the internal surfaces coming in contact, contracted adhesions so as to make the nose perfectly solid at that part. The size, also, of the columna, which doubled upon itself and contracting deep adhesions during the inflammation which took place, forms a round and solid pillar to support the tip of the nose.

Great precautions had been taken to guard against exposure to the cold, which, by stopping the circulation, might at once defeat the whole object of the operation. As soon, however, as adhesion had taken place, it was perceived that no danger from this source was to be apprehended; and although during the winter he has slept in a room in which water has frequently frozen, and has been since repeatedly exposed during some of the coldest days, he finds that the temperature of the organ is never greatly diminished.

The cicatrization of the wound in the forehead was greatly retarded by the cold weather, and less than half the time would have been required, had the operation been performed during a warmer season; when it had diminished to a small size, and cicatrization, as frequently is the case in the filling up of large wounds, seemed to have been arrested, great benefit was found from the use of an ointment composed of six drops of creosote to an oz. of simple ointment. On the application of this to the wound, the effects were at once apparent. A small pellicle formed over its whole surface, which was shortly replaced by a firm, consistent cicatrix.

In one or two cases operated upon by Dieffenbach, much swelling took place in the new formed nose the day after the operation, arising from the difficulty of the blood, which had entered by the arteries, being conducted off by the veins. In one case the nose became so enormously distended, that it was feared the adhesions would be entirely destroyed, and it was only by the repeated application

of leeches, 70 or 80 being employed in the course of 48 hours, that this danger was finally avoided. In the present case, from the extension given to the incision on the left side, care being taken that traction should not be made too forcibly on the part, so as to compress the pedicle at its base, the circulation was, from the first, unobstructed.

In the account of the foregoing case, it has been attempted to bring forward some of the most important points which might be of service as a guide to future operators; and if the author has been so fortunate as to throw any new light, however small, on the operation, he will feel that he has rendered a service to science and to humanity.—*Boston Med. and Surg. Jour.*

## ON PROSTITUTION IN THE CITY OF PARIS, &c.

We derive the following notice of this curious work from the *Medico-Chirurgical Review*:—

It is the duty of the medical philosopher to investigate the nature and causes of moral evil as well as of physical ill—and for this good reason, that both are inseparably connected, in causes, effects, and consequences. The investigation which occupies these two volumes has been very ably conducted by a talented physician, who paid the debt of Nature just as he had finished the work, and at the early age of 45 years! The matter of this inquiry is exceedingly curious and interesting. The inquiry could not have been effected in this country at all, because we have no police regulations or registry of abandoned females as they have in France. The labour, time, and research expended on these volumes must have been prodigious, and the work itself will stand a monument of Dr. Duchatelet's industry and perseverance.

We shall first notice a table which shows the number of prostitutes annually registered in Paris for 21 years—namely, from 1812 to 1832 inclusive. In the former years were registered 15523, and this astounding number has kept gradually on the increase, so that, in 1832, no less than 42,699 abandoned females were registered and licensed for the deplorable trade of destitution and destruction! A friend of the author's, while residing in London, in the year 1834, made especial inquiries as to the number of prostitutes in this capital: but nothing positive could be learnt, because no record is kept. Some magistrates estimated the number as high as seventy thousand—others as low as eighteen or twenty thousand. He thinks the truth may lie about the number of thirty or forty thousand. Still, considering the disparity of population in the two capitals, the balance is far in favour of the British metropolis. It is curious and remarkable that, in the year 1812—that of the disastrous retreat from Moscow—the number of prostitutes was nearly 7000 less than two or three years afterwards.

The author has constructed a curious chart, in which the different provinces or departments are shaded deeper and deeper according to the number of prostitutes which they annually send to the metropolis. As might be expected, the departments of the Seine—that is, Paris itself, is as black as ink can make it, showing the awful number of 4744, as its quota! One single department (Loxere) is unsullied by ink, having contributed nothing to the mass of Parisian prostitution.

There is a table indicating the avocations of the parents, and another denoting the employments of the prostitutes themselves; but from these tables we cannot collect much that would be satisfactory. This, however, may be observed, that the more sedentary the avocations—the more uncertain the employment—and the more congregated the *employées*, the more likely they are to afford nutriment to the destructive leaven of prostitution.

*Education.*—This was too difficult to ascertain; but, in general, it was found to be very low among these unfortunate beings. One-third of them were incapable of writing their own names.

*Illegitimate Births.*—An idea has prevailed that a great proportion of the women of the town were, originally, illegitimates. A rigorous investigation has disproved

this opinion. The proportion among them was about one in four in Paris, but much less in the departments. It is curious that among the registered street-walkers were individuals possessed of rentes to the amount of 500 francs, and even 2000 francs annually!

*Age.*—Where this could be ascertained, it was found to vary from the age of 13 years to 50. There were very few below 16, and few after the age of 40. Some, however, appeared to have been allowed to inscribe their name at the age of 10 and 11—a scandalous permission!

*Primary Causes of Prostitution.*—These are numerous, and probably some of those alleged are fictitious. They were as follows. Almost all of the prostituted acknowledge that they had led a disorderly or irregular life for some time before becoming actually prostitutes on the town. Few or none came to register their names, who were not deflowered previously.

*Idleness.*—Among the primary and predominant causes was IDLENESS! Females abandoned by their parents, and without any avocation, see nothing but starvation, before them, and therefore fain to fly to prostitution for support! Many who came to inscribe their names on the fatal list, had not tasted food for some days before they could make up their minds to the dire alternative!

*Vanity.*—This, and the wish to dress finely, added greatly to idleness, as a cause of prostitution, especially in Paris.

*Seduction.*—This is a very efficient cause, particularly in the country. The poor deceived creatures come to Paris in search of their seducers, and finding themselves without support, are obliged to have recourse to the town. There are always a great number of abominable bawds on the watch for these country girls. Many who are seduced in the country, come also to hide their shame, and with the full intention of going on the town.

*Domestic Chagrin and bad Treatment,* at home, drive many into this wretched line of life. The brutality of step-fathers and step-mothers is one of the most common excuses which females from the country make, when they first inscribe.

*Long Sojourn in Hospitals* is set down among the causes of prostitution. In these institutions the bawds have their agents always on the watch to seduce young females into the haunts of ill-fame on leaving the establishment.

*The Misconduct and bad Example of Parents* are no inefficient causes of loss of virtue. Widowers living openly with concubines afford a sad example to the daughters, and lead to the most disastrous consequences. Separation of fathers and mothers has a similar effect.

*Loss of Employment and Want* are, of all causes, the most accused, and perhaps justly so, by those who inscribe their names on the black list of prostitution! The salaries of females employed in dress-work, and numerous other sedentary avocations, are only sufficient to prove subsistence for the time, and when the season is over, or any circumstance throws them out of work, they are forced to go on the town, or starve. These causes are daily becoming more efficient, by the multitudes of young men who are now usurping the habits and employments of females in all kinds of work. It is often found that mothers abandoned by their husbands have taken to prostitution for the support of their children—and girls for the support of their aged parents!

Our author observes that, at first sight, one would be tempted to attribute much of modern prostitution to modern civilization; but history informs us that this vice was very common in the middle ages, and consequently in the midst of barbarism.

The following numerical particulars are curious and melancholy.

Out of 5183 inscriptions, there were 164 instances of two sisters inscribing at the same time—four instances of three sisters inscribing—three instances of four sisters entering at once on this wretched system of life. There were 16 instances of mother and daughter inscribing together—four of aunt and niece—33 of cousins coming to the same office for the same purpose.

#### PHYSIOLOGICAL AND PATHOLOGICAL CONSIDERATIONS.

*Corpulency.*—The embonpoint and brilliant health of a great portion of prosti-

tutes strike the observer with surprise, when he sees them collected in masses at any public place. The exceptions, however, are numerous, and we observe a certain sprinkling of individuals meagre, or even emaciated. Those who live constantly among these unfortunates, and have them always under their eyes, remark that this corpulency seldom commences till after the age of 25 or 30 years. It is rarely seen among the young, or those who have been but a short time on the town. Many people, including physicians, have attributed this corpulency to the frequent use of mercury—the fact being certain that people generally become fleshy and healthy after a course of that medicine. But the physicians of dispensaries, prisons, and hospitals deny this position, averring that they see great number of prostitutes become embonpoint, who have not had any venereal disease for years previously. These and our author attribute the phenomenon to inactivity of life, rich food, and frequent use of the warm-bath. Prostitutes are almost always eating and drinking—lie in bed till ten or eleven o'clock in the day. The meagre and emaciated exceptions may be accounted for by poverty and hunger—or constitutional dispositions.

*Peculiar Alteration of the Voice.*—We frequently observe prostitutes who are most beautiful in face and figure—elegant in their manners, and even refined in their tastes—in short, who seem the beau ideal of Venus herself—till they open their mouths—when, instead of musical tones and silver sounds, they utter such hoarse and discordant intonations as crucify the ears of the listeners! This vox racua occurs about the age of 25 years—and is very general, though it is more common amongst the lower than the higher orders of the sisterhood—amongst those who linger about the doors of cabarets—who often get drunk, and then indulge in loud vociferations. The true causes may be inferred from these observations, namely, the application of cold and damp, when lightly clothed—in-temperance—and great exertion of the cause. Some causes have been assigned, which are either fanciful or revolting, and which we pass over. This vox racua has been on the decline in Paris since the police regulations have become more strict.

Two sections are devoted to the colour of the hair, eyes, and eyebrows of prostitutes—and also to the stature; but we do not deem it necessary to notice them here.

*State of the Genital Organs.*—An immense experience in the examination of prostitution has made our author very doubtful and timid as to the proofs of virginity, and also of defloration. He gives a curious history of two young girls who were insulted in the street by some young men, and reproached with prostitution. They brought their accusers before the magistrate, and as the young men persisted in the charge, they offered to submit to an examination as to their virginity. A most able physician undertook the investigation. After a most careful examination, he deposed that, in respect to one of the girls he could not determine whether she was or was not a virgin. As to the other, he suspected that she was not a virgin; but he could not swear to it! It was afterwards ascertained that they were common girls of the town, and that one of them had been twice, or thrice in hospital for syphilis!

This circumstance made a deep impression on our author at the time, and he lost no opportunity afterwards of investigating the subject. As we before hinted, the more he sought to ascertain the marks of defloration and the proofs of virginity, the more difficult he found the inquiry, and the more diffident he became. In fact, he acknowledges that, on the verbal declarations of young girls, he could often depend far more than on actual inspection of the genital organs. However, our author set to work a great number of physicians and surgeons, who had extensive opportunities of examining the organs of generation in prostitutes, and the result is as follows:—The genital parts do not present any particular alteration or appearance in these females, different from married and modest women. The constant employment of the speculum, of late years, has rendered the inquiry more positive in its results. It was frequently found that young girls, who had very recently become prostitutes, had vaginas as large as women who had borne several children—and, on the other hand, they often examined women, who had been 12 or 14 years on the town, and who evinced signs of premature decrepitude,

and yet where the vagina and other parts of the genitals presented nothing at all remarkable. They examined a woman, aged 51 years, at the Prison of Madeleine, who had been on the town since the age of 15, and yet the genital organs might have passed for those of a maid just turned of eighteen years.

These facts, which have been accumulated and verified on the largest scale, present important subjects for reflection to the medico-legal inquirer. Works on medical jurisprudence give us such minute rules for ascertaining the fact of a rape having been committed, that nothing seems more easy than to prove the truth or falsehood of the indictment. Yet physicians and surgeons of the most unbounded experience, and who are in the habit of daily making personal examinations of females, are so bewildered with doubt, that they hardly ever give a positive opinion on the subjects of violation or virginity. When we consider how often these decisions are left to a jury of MATRONS, we may well shudder at the result!

M. Jacquemin has discovered a new sign of pregnancy by the examination of prostitutes. It is a deep violet tint, sometimes like the lees of wine, which the whole mucous membrane of the vagina presents, when utero-gestation is going on. This sign has never failed him, and he relies on it with the most implicit confidence. This chapter concludes with some observations on the state of the clitoris, the anus, and the function of menstruation. Nothing very decisive, however, can be concluded from examination on these points.

*Fecundity of Prostitutes.*—The state of menstruation varied so much among these females, that nothing very positive could be inferred from investigations the most careful. In respect to fecundity, there is a general impression that prostitutes seldom become pregnant. Inquiries among books and men led to the conclusion that out of a thousand prostitutes scarcely six became annually pregnant, so as to run the full term. They generally have recourse to *La Maternité*, when about to be confined, and the sage-femme of that establishment, Mad. Legrand, informed our author that from four to six became inmates there every year. They almost all had difficult births, requiring the aid of instruments—and the infants rarely survived. Many of the mothers themselves die in child-bed. Still a more careful and extended inquiry among the medical officers of hospitals, dispensaries, prisons, police bureaux, &c. has convinced our author that pregnancy takes place among prostitutes much more frequently than is imagined. He has reason to believe that, from 30 to 60 are annually delivered in Paris. But abortions during the early months, and even up to seven or eight months of pregnancy, are found to be frequent. Abortions are not seldom procured artificially by these females.

*Syphilis and the Ick.*—Of all the diseases to which these poor creatures are exposed, none are more frequent than those which we here mention. But these two are reserved for distinct chapters.

*Menorrhagia—Tumors—Recto-vaginal Fistulæ—Cancer Uteri.*—Prostitutes are more subject to suppression of the catamenia than to profuse menstruation. Nevertheless, the latter is not very unfrequent. Tumors of the labia pudendi are very common. They are indolent, and chiefly contain a thick albuminous fluid. They grow to an inconvenient size if neglected. When opened they almost invariably discharge a liquid of the most fetid smell. If it touch the hands of the operator, he will not get rid of it for some days. There are about 30 cases annually of recto-vaginal fistulæ, and strange to say, they sometimes heal of their own accord, while these patients are pursuing their ordinary avocation! These fistulæ have generally been found to coexist with phthisis. Cancer of the uterus, though sometimes met with, is very rare among prostitutes.

*Mental Alienation.*—Weakness of head—state bordering on insanity—is one of the most frequent complaints that are attributed to the mode of life of the prostitute. Esquirol has received into the wards of the Salpêtrière, an average of 21 insane prostitutes annually—a stupendous portion! There can be no doubt that this large proportion of mental alienation is owing to the unhappy and unhealthy modes of life pursued by these miserable creatures, and not to mercury, as has foolishly been supposed. Scrofula is exceedingly prevalent among this class too.

OLIVER GOLDSMITH.

AND how comes the name of Oliver Goldsmith to head an article in a Medical Journal? will be the first and natural remark of our readers. The author of the 'Traveller,' and the 'Deserted Village,' of the 'Vicar of Wakefield,' of the 'Citizen of the World,' and of some good comedies; the compiler of a still popular work on Natural History, and of Histories of Empires and Kingdoms; the friend and associate of Burke, Reynolds, and Johnson, their butt and their satirist, has undeniable claims on the enduring admiration of posterity. Physicians who are lovers of poetry, and quiet humour, and of an easy and natural style of writing, will of course yield their homage to the genius of Goldsmith. But they ought to do more: they ought, whilst admiring the author, to take warning from the irresolution, the extreme credulity, the improvidence and the fickleness of purpose of the man, which prevented him from availing of the opportunities obtained by the kindness of friends to complete his collegiate education in Dublin, and his medical studies in Edinburgh and Leyden, and which, at a subsequent period, kept him poor, and at times destitute, in the height of his fame. The reading world may selfishly express their pleasure that Goldsmith was prevented, by the causes just mentioned, from succeeding in the practice of physic in London, and from being qualified to pass an examination "for mate to an hospital," preparatory to his receiving a medical appointment in India; yet was the subject of these disappointments far from gaining on the score of personal happiness by those causes, which ultimately gave him fame and place among the shining lights of English literature.

Medicine, it has been well said by a contemporary, is a jealous science, and will only be courted for its own sake; rewarding with niggardly hand those followers who turn aside too often to the attractive field of literature, or even to other and severer, or more exact and satisfactory, paths of inquiry. Testimony to this truth is borne by the lives of Goldsmith, Akenside, Smollet, and other medical men, who have been enticed from the practice of their profession by the charms of literature, and of numerous students of medicine, who have allowed their minds to be discursively employed. Even were literary fame to be assured to the numerous aspirants after it, who have abandoned the study of a profession, happiness, or simply bodily and mental comfort, will seldom fall to their share. But of the numbers of youth, whose nascent ambition displays itself in the delusive desire of acquiring notice and support by literary occupation, how few, how very few, ever reach the goal of their hopes in this one respect. And, as to the favourable position which they may hope to gain in general society by their talents, their accomplishments, their wit, or their learning, they will soon discover the mortifying fact, that the fatuous rich man takes the *pas* of them, and the regular professional hack obtains station and office and trust to their exclusion, even by those very persons who profess to hold their intellect and attainments in the highest estimation.

The inference from this, which we would impress on a youth yet undecided as to his future career, is, to go through regularly, systematically, perseveringly, if not enthusiastically, the course of studies which he has once begun. No possible circumstance in after life can justify a boy's neglecting the attainment of elementary learning: nor ought any apology be received from parent, guar-

dian or teacher, who, yielding to the wilfulness or dazzled by the precocity of the boy, fails to keep him on the beaten track, and to prepare him to act the part, with advantage, of the collegian, first, and the useful man of the world, afterwards. The young man who has reached the age, if not of wisdom, certainly of ability to commune with himself, ought to know, that the wit which makes him the favourite of the social circle, and perhaps sets the table in a roar, will not advance him a whit to wealth or fame, or give him in any manner that hold on society which the most moderate ambition would desire. He should know, that the reputation acquired among his female acquaintances by his being the author of some pretty verses will not ensure him a preference in their friendship, or enable him to be a successful suitor for the hand of one of them over the most plodding and prosaic of men. He may write an essay on some subject of belles lettres, and be complimented by his friends and eulogised in the newspapers; but all the praises, thus lavished, will not procure him a dinner, or in the least add to his credit at his tailor's or boot-maker's. He will see as much warmth of approbation evinced towards an itinerating mountebank, or the vender of a quack medicine, and in nearly the same language as that which, perchance, flattered his own vanity.

Paradoxical as it may sound, we should say, that the more acute the sensibilities, the more lively the mind, and the greater the quickness of parts, of a youth, the more is he in danger of pursuing an erratic career, of involving himself in difficulties, of being useless to himself and an object of scorn to the world, unless he sedulously and methodically school and discipline himself by a systematic and protracted course of study and mental labour. Without this preliminary, even genius becomes profitless, aimless and worthless, if not a curse, to its possessor.

One of the first and most important lessons which should be taught to the youth, whose aspirations for future fame make him restless in his present station, and fickle and negligent in his studies, is that the greatest geniuses, they who left behind them the most enduring monuments of fame, have ever been the most industrious students. Were Newton's sublime discoveries made in ignorance of any thing that had been discovered and recorded in natural philosophy before his time?—The falling apple suggested the law of gravitation, but would it have suggested this law to a man whose mind had not gone over all the fields of human knowledge, and found them barren of the fruit which he coveted. Did Milton trust to the suggestions of a heated imagination alone, or did he not rather bring with him all the learning of his time in languages, science, history, and art, and the advantages of foreign travel, and age, and years of intellectual training, to the composition of the *Paradise Lost*. Although Pope lisped in numbers, he did not trust, in after life, to the inspiration of the moment for the wonderful harmony of verse for which he is so celebrated. He altered and corrected his lines much oftener than would seem to our poetasters of the day to be at all consistent with the reputation of poetical genius. The lives of the most noted artists are a continued commentary on our assertion, that the greatest geniuses have ever been the most industrious students. Michel Angelo, successful and distinguished in painting, sculpture, and architecture, and a poet of great talent, who when yet a youth executed works in sculpture, which were the despair of the most distinguished masters, never ceased from his studies and his exertions to

improve. His motto, on which he continued to act when approaching the ninetyeth year of his age, was, "I am still learning!"

It is impossible for a youth to foresee into what path of professional, or of scientific, or literary labour he may be led, in after life, since various circumstances often singularly modify and thwart our present resolves, and change the complexion of our pursuits. One thing is, however, very certain, that he will be unfitted for actual and useful duty in any one of these departments, unless he shall have acquired a certain amount of preliminary and elementary knowledge, and, what is to the full as necessary, habits of study and intellectual discipline. It is, therefore, not only idle but criminal for him to allege, that as, for example, he does not intend to be a professional man he need not attend to classical learning; or, on the other hand, for an intended physician, lawyer, or divine, to say, that mathematics will not be necessary for him, and that it is enough if he devote himself to the languages; neglecting, perhaps, the while to acquire a decent chirography and a knowledge of the commonest rules of arithmetic. From the same insane premises, which, if not laid down, are admitted to be sound by the practice of pedagogues and pedants, who still have, in too large a number, charge of the education of youth, it follows, that all stress is laid on learning the syntax of a language, but no attention paid to its harmonious utterance; and we hear him called a learned man who can imperfectly enunciate, and often not correctly write his own language. A youth ought not, therefore, to be made to suffer in after life, by his present impetuosity and waywardness, which should prevent him from regularly applying himself to his studies, or by the prejudices and blindness of his pedagogue, who would restrict him to one subject, alleging that it is the sum of human learning.

Once engaged in the study of a profession, the same method, perseverance, and zeal, which were deemed indispensable in his academic and collegiate course, should now be practised. No longing after a change, no hopes of inherited wealth, or faint glimmerings of honour and distinction to be obtained by other means and study, should divert him from his present plan. His engagements are those of duty and honour: duty to himself, to his parents, and to his preceptor; honour, in the implied understanding that on their account, if not on his own, he will do his utmost to pursue with industry and terminate with credit his studies. It may so happen, that, after having obtained his licence or diploma, he declines to avail of their sanction to pursue his profession; feeling himself either hurried away into the regions of poetry, or tied down to the severer studies of the exact and demonstrative sciences; or, in fine, becoming suddenly possessed of a large fortune which furnishes him with the means of tasteful indulgence and luxury—ease and leisure. But of one thing he may be well assured. No matter from what cause he has been led, or by what strong impulse driven, to abandon his profession, he will at the outset of his career, and in all his subsequent course, find himself a better and a happier man, as he will unquestionably prove to be a more useful and respected one by the world at large, than if he had not been thus qualified to take a station and obtain a living by the exercise of talents, strengthened by knowledge and habits of industry. Nor are these the only advantages gained by his previous studies. He will be better prepared by them for his new undertaking, whatever it may be—whether poetry and pure fiction, or history, or natural science, or political economy. Illustrations and allusions, and valuable and pertinent facts, of which but for his preparations for professional



life he would have been totally ignorant, will then come in aptly to adorn, explain, and enforce his views and his narratives, and render them pregnant with instruction, without divesting them of the power to amuse. There will have been an actual saving of time, by his previously acquired knowledge dispensing him from the necessity of references to encyclopedias, lexicons, doctrinal disquisitions and discourses.

But the more probable, and indeed common course of events in the life of the student, whose mind may have been filled with various phantasies and dreams of literary occupation and renown, will be the discovery, after he has gone through his time of probation, (professional study,) that he is best fitted by nature and education for the quiet professional life to which his friends had originally designed him. He is now grateful both for their advice and urgency, as well as for his own constancy in enabling him to complete the studies which he had begun. Had these been neglected agreeably to the first suggestions of his vanity, he might at the best have been a needy literary adventurer—perhaps as some before him, with real genius but illy regulated mind and imperfect education, a splendid blackguard. Under this last denomination we would class Savage and Sheridan. From a similar fate and character, Johnson and Goldsmith were just saved; for both of them were compelled, in a particular period of their lives, to consort with the needy, the profligate, and the low.

We may state now, what we should perhaps have announced at the beginning of these remarks, that the subject of them was suggested by the recent publication of *Prior's Life of Oliver Goldsmith*,\* a work which abounds in curious, and in many respects new details respecting the man and the author. It is conceded by the critics and reviewers, generally, to be one of the most interesting works of biography which has appeared for many years past.

After narrating the events and incidents in the boyish life of Goldsmith, Mr. Prior describes his Dublin college period, and thence his medical studies in Edinburgh. From this latter city he went to the continent, and remained a year at Leyden, still in the fullness of its glory, where he is said to have been less attentive to the acquisition of professional than of miscellaneous knowledge. Leaving Leyden, he set out on his continental tour, which he performed for the most part on foot; and the particulars of which were never formally published, but were interwoven with his works. He travelled through France, Switzerland, and Italy—"half idling, half studying, always cheerful, observant, and imprudent, he worked his way back to England, and launched himself to try his fortune in London."

"On his arrival in that vast and busy metropolis, like the greater number of literary aspirants, he was compelled for many years to maintain a hard and unequal strife for the very necessities of life—at one time driven to the stratagem of concealing his real name, and applying for the place of classical teacher in a school—at another, seeking shelter with a chemist, 'residing at the corner of Monument or Bell Yard, or Fish Street Hill,' who 'taking compassion on his destitute condition, and pleased with the degree of chemical science he displayed, admitted him into his establishment;' again, if an after-confession of his own may be understood literally, sunk to the squalid companionship of the beggars of Axe Lane. Subsequently, by the kind assistance of Dr. Sleigh and a few

other acquaintances, he was enabled to establish himself as physician in Bank-side, Southwark, but without much success."

His professional advance was so slow that Goldsmith's patience, never great, deserted him entirely; and in 1756 he once more changed his business and became an occasional assistant in the school of Dr. Milner, at Peckham.

In the early part of the following year he got employment as a writer in the *Monthly Review*. Henceforward, till the close of his life, he was compelled to labour assiduously, and with little intermission, for booksellers and publishers. Both as a matter of history and a lesson of warning to the literary aspirant, we will give Mr. Prior's remarks on Goldsmith's labour and income therefrom, during a busy and, we fear, more than an average profitable year.

"It may be a source of curiosity, therefore, to trace his income, as far as can be ascertained, during this year of acknowledged industry. The pamphlet on the Cock Lane Ghost, as appears, was three guineas; the 'History of Mecklenburgh,' if he were actually the author, may be estimated, by the value of other works, at twenty pounds; revising the 'Art of Poetry,' ten pounds; seven volumes of Plutarch, forty-five pounds; 'Citizen of the World,' probably ten or fifteen pounds; five sheets of the 'History of England,' two guineas; 'Life of Nash,' fourteen guineas; occasional pieces, such as Essays, Prefaces, and Criticisms, perhaps twenty pounds; making together, less than one hundred and twenty pounds. When we consider the time required for these various works, it is not probable he could have written any thing of moment for another publisher; and there is little doubt, as we find in the instance of Collyer, that he occasionally paid for assistance. With this deduction from small means, there might still be something left for a strict economist, though little to gratify the pride of literature; and in all the labours of the year there was nothing conducive in any degree to fame. Yet, without some latent hope of futurity having better prospects in store—the vague, though encouraging impression, that, at a more favourable moment, genius would take wing in nobler and more enduring flights—who would devote himself to drudgery like this, at once constant, solitary, and ill-requested?"

And 'yet drudgery like this, at once constant, solitary, and ill-requested,' will be, as it has ever been the lot of nearly all those who break loose from what they conceive to be the trammels of professional and routine business life, to engage in the career of literary authorship. Scott has somewhere said, (we believe in one of his lives of the authors' whose works he edited,) that the income of a scrivener in regular employment for, say a period equivalent to the active portion of a man's life, will be found to exceed that which the most successful author receives during the same time.

#### PRIZE ESSAYS FOR 1837-8.

##### 1. By the Royal Academy of Medicine of Paris.

1. THE Academy offers a prize of two thousand francs for the best Essay on "the Physiological History of Menstruation, the influence exercised by this function on disease, and the effect of diseases upon the secretion." To be awarded in 1837.

2. *Portal Prize*.—On "the History of the Discoveries relating to the Venous System, from Morgagni until the present day, and on the influence which these discoveries have had upon the knowledge and treatment of diseases." Prize, six hundred francs, to be awarded in 1838.

3. *Bernard Prize*.—On "the Influence of Physical and Moral Education in producing Excitability (*surexcitation*) of the Nervous System, and on the Diseases resulting from such Excitability." The prize of fifteen hundred francs, will be awarded in 1838.

N. B.—The essays, enclosed in the usual form, are to be sent to the secretary's office at the Academy, before the 1st of March, 1837 and 1838.

2. *By the Society of Corresponding Physicians at St. Petersburg.*

ON HOMŒOPATHY.

The Society of Corresponding Physicians at St. Petersburg, under the convictions that the cases treated homœopathically are so many examples of the natural progress and termination of disease, which it is desirable to have faithfully recorded, with the view of discovering the laws of development of pathological phenomena; and in order that the reveries of the Hahnemannians may not be without some advantage to rational medicine, offer a prize for the best essay on the symptoms, progress, change of form or metastasis, and termination of diseases, treated after the homœopathic system.

3. *By the St. Petersburg German Medical Society.*

ON THE EGYPTIAN OPHTHALMIA.

A gentleman who has himself suffered from the destructive influence of the Egyptian ophthalmia has presented to the German Medical Society at St. Petersburg the sum of one thousand rubles, about \$900 on condition that it offer a prize for the best dissertation on the nature and most effectual means of curing this terrible disease. The dissertations must be written in Latin, French, English, or German, and must be sent in by the 27th September, 1837, with the motto and the name of the author sealed up, free of expense, and directed to the secretary of the German Medical Society at St. Petersburg.

UNIVERSITY OF PENNSYLVANIA.

We see in the published list of Trustees, Officers, and Medical Class of the University of Pennsylvania, that the matriculants of this latter in the session of 1836-7 amount to 401. These gentlemen were from the different states and countries, as follows:—Alabama, 20; Canada and the other British Provinces, 7; District of Columbia, 1; Delaware, 7; England, 1; Florida, 14; Georgia, 22; Illinois, 3; Ireland, 2; Indiana, 1; Kentucky, 4; Louisiana, 5; Maryland, 5; Mississippi, 11; Missouri, 1; New England, 16; New York, 13; New Jersey, 23; North Carolina, 39; Pennsylvania, 37; Philadelphia, 60; South Carolina, 16; Tennessee, 12; of the United States Navy and Army, 4; Virginia, 90; West Indies, 1.

The degree of Doctor of Medicine was conferred on 154 gentlemen of the above class, at a public commencement held March 31, 1837.

At a public commencement held in July 1836, the degree of Doctor of Medicine was conferred on eight gentlemen.

MEDICAL INSTITUTE OF PHILADELPHIA.

The lectures in this institution will begin on Monday, April 3, and be continued until the latter part of October—August is a vacation. The following is the list of lecturers, and of the subjects on which they lecture. Dr. Nathaniel Chapman, on the Practice of Medicine; Dr. William E. Horner, on Anatomy; Dr. Samuel Jackson, on Materia Medica; Dr. John Bell, on the Institutes of Medicine and Medical Jurisprudence; Dr. John K. Mitchell, on Chemistry; Dr. Hugh L. Hodge, on Midwifery; Dr. Thomas Harris, on surgery.

The winter session at the Medical Institute, is held by Examinations on the above branches, conducted by Drs. Goddard, Mutter, R. Morris, and W. Harris, at 4½ p. m. daily.

# THE ECLECTIC JOURNAL OF MEDICINE.

EDITED BY JOHN BELL, M.D.

LECTURER ON THE INSTITUTES OF MEDICINE AND MEDICAL JURISPRUDENCE;  
MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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## DISEASES OF THE EAR.\*

THIS is rather a new work than a new edition of a Memoir on Chronic Deafness, published by the author three years ago.† The earlier work was fragmentary; the present, Dr. Kramer puts forward as a complete treatise on Diseases of the Ear.

The first section contains a critical analysis of the literature of diseases of the ear, in chronological order, from the earliest times, concisely and searchingly written; but our limited space will oblige us to pass over this part of the work with slight notice. Up to very recent times there has prevailed the greatest uncertainty in the knowledge and want of plan in the treatment of the diseases of the ear; and this, Dr. K. asserts, has been owing, in a particular manner, to the neglect of actual examination of the organ in its diseased state.

Hippocrates does not treat of affection of the ear as separate forms of disease. He merely mentions them as accompaniments of fevers and other acute complaints, and even then only according as they are prognostics of a favourable or unfavourable termination. Celsus, who first described affections of the ear as distinct diseases, gave excellent rules for the treatment of the more violent inflammations of this organ, and recommended ocular inspection of the auditory passage in cases of long-continued deafness. But, unfortunately, the local use of acrid stimulating remedies, recommended by him for all diseases of the ear without distinction, has obtained, even to our time, the greatest favour from practitioners. Galen adopted this practice also, although he blames Appollonius for advising pains and ulcers of the ear to be treated indifferently with the most violent stimulating substances; but, indeed, it must be confessed that, in

\* Die Erkenntniss und Heilung der Ohrenkrankheiten. Von Dr. Wilhelm Kramer. Berlin, 1836.

The Nature and Treatment of the Diseases of the Ear. By Dr. William Kramer, of Berlin. With Copperplates. Berlin, 1836. 8vo. pp. 400.

† Erfahrungen über die Erkenntnis und Heilung der langwierigen Schwerhörigkeit 8vo. Berlin, 1833.

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Galen's time, the knowledge of the ear was retrograde, compared with its state in the days of Celsus. For more than a thousand years the crude empirical practice of Galen in diseases of the ear maintained full and undiminished sway. The additions made to the knowledge of the anatomy of this organ towards the end of the fifteenth and the first half of the sixteenth century, by the labours of Achillini, Vesalius, Ingrassias, Eustachius, Fallopius, Casserius, and others, exerted little influence on the pathological and therapeutical opinions of the physicians of that time; so that, in the work of Mercurialis, we do not find any thing more than was given by Galen fourteen hundred years before. Fabricius Hildanus was the first who recurred to the true way of investigation, but he confined his observations to the auditory passage. He was the inventor of the *speculum auris*. The necrotomic examinations of Bonetus in reference to the ear are only to be considered as examples how such inspections ought *not* to be made, if they are intended to be of use to science. A few years after Bonetus, Duverney published a work on the ear, the anatomical part of which, abounding as it does in excellent and illustrative investigations and descriptions, has gained, even for the annexed pathological and therapeutical treatise, a meed of approbation to which it is by no means entitled. Still Duverney in that work went a step beyond his predecessors, inasmuch as he has not only considered the diseases of the auditory passage and of the membrana tympani, but also those of the cavity of the tympanum and labyrinth. But we admire in Duverney the anatomist of the ear, not the surgeon of its diseases; and in this category we must include, with still greater reason, Vieussens, Valsalva, and Cassebohm.

To a postmaster of Versailles, of the name of Guyot, we are indebted for the hint of a discovery which forms an epoch in the history of diseases of the ear; a discovery which has imparted to the diagnosis and treatment of the diseases of the middle and internal ear the only sure basis: we mean the possibility of introducing a catheter into, and consequently injecting, the Eustachian tube. Guyot, having some knowledge of anatomy, was led to think of this, with the hope of doing something for the alleviation of a deafness under which he himself laboured. For this purpose he invented a syringe, which he presented, in 1724, to the Royal Academy of Sciences of Paris. But he proposed to introduce the catheter into the Eustachian tube by the mouth, a thing not practicable, though he might, as the reporters of the academy remark, have succeeded in washing out the extremity of the Eustachian tube. It is probable that it was merely by this that his own deafness was relieved. For the very imperfect and indeed impracticable procedure of Guyot, Archibald Cleland, an English army surgeon, substituted, in 1731, the introduction of a flexible silver tube through the nose into the Eustachian tube. Petit had previously proposed, and Douglas had demonstrated in his anatomical lectures, the possibility of passing a probe, &c. into the Eustachian tube by the nostrils. But Wathen was the first who gave cases in which, by injections into the Eustachian tube, a partially favourable result, at least, was obtained.

We are sorry that we cannot follow our author through his interesting and instructive history and criticism of the numerous publications on diseases of the ear, which have appeared in the different countries of Europe, in more recent times. There does not appear to have been hitherto much that is valuable on diseases of the ear in the medical literature of Germany. Lentin, Himly, Schubert, Trampel, Albrecht, Van Hooven, Beck, Riedel, Vering, Rauch, (of St. Petersburg), Krukenberg, and Lincke, are the chief writers. Of these, the works of the two last named are most deserving of notice. The inflammatory affections of the ear are successfully illustrated by them, but they have failed in sufficiently discriminating their different sites and forms.

On turning to the medical literature of France, we find works characterized by a profundity which we have looked for in vain in those of Germany and England. At the head of the French medical literature on the ear stand the works of Itard and Deleau, with whom neither Demougeau nor Alard can be associated. Montfalcon is a slavish follower of Leschevin; and the posthumous work of Saissy scarcely deserves the encomiums which have been lavished upon it. Saissy writes too much in the old style of imagining diseases, and

then devising modes of cure for them. The latest work on the ear, published in France, is a small brochure, entitled, "*Recherches sur la Surdit  , par J. V. Gairal,*" which contains what the author is pleased to call a new method for the catheterism of the Eustachian tube. He describes instruments of his own for this purpose and for the perforation of the *membrana tympani*; but we cannot see that they are improvements. Perhaps the hint for the employment of an elastic gum bag, for injecting air into the Eustachian tube may be occasionally useful, it being more readily obtained than an air-condensing machine.

In England, the state of medical science relating to the ear, and the art of the aurist generally, are in a condition vastly inferior to the same branches in France, and even in Germany before the works of Dr. Kramer. The initiatory essays at improvement, by Cleland and Wathen, were not followed up as they ought to have been. Sir Astley Cooper's papers in the *Philosophical Transactions* for the years 1800 and 1801, attracted considerable attention to the subject at that time; and we may look upon Mr. Saunders's work, emanating as it did from the school of which Sir A. Cooper has been so bright an ornament, as a result of the impulse thus given. Mr. Saunders's is not, however, a work from which we can derive any fundamental notions of the subject, and is totally deficient in data for forming a correct diagnosis. He has not even been successful in elucidating that which he made his particular object of investigation, viz., what he calls *the puriform discharge from the tympanum*, under which name, we think, he has confounded distinct diseases of the auditory passage, *membrana tympani*, and cavity of the *tympanum*. Mr. S., however, deserves credit for his attempt to improve the state of the surgery of the ear in this country; and it is to be regretted that his endeavours have not been seconded by any person qualified for the task. The practice in diseases of the ear has been almost entirely left in the hands of persons whom education had in no way fitted for scientific inquiry.

Mr. Curtis, in his treatise on the Physiology and Pathology of the Ear, has appropriated the *whole* of Mr. Saunders's essay. The exact words, indeed, have in some instances been changed, but the plagiarism is too manifest to escape even the most inattentive reader. To this paraphrase of Mr. S.'s work, Mr. Curtis has added some things from other authors, and some histories of cases treated by himself, (of course all most successfully,) and has thus concocted a treatise which, with singular effrontery, he has put forth as entirely of his own composition, and as containing the results of his own practice. The work has now, for a period of about twenty years, been forced upon the attention of the public, by the advertisement of successive editions; and it is a melancholy fact, that there should have been found, editors of even medical journals, either so ignorant or so careless as to lavish commendation on such a production.

If we take up the works of Wright and Stevenson on the ear, with the expectation of finding any thing much better in them, we shall be disappointed. Though Stevenson has not pillaged Mr. Saunders's work, as Mr. Curtis has done, we yet recognize the same ideas running throughout his treatise. "Wright," says Dr. Kramer, "is only exceeded in shallowness and emptiness by Stevenson and Curtis." We may add, he is not a whit behind them in pretension.

Mr. Buchanan, a respectable and well educated practitioner, has published some works on the ear. Dr. Kramer thinks, that the only good thing in Mr. B. as an aurist is, that he practises catheterism of the Eustachian tube; but, with the exception of the "surgical remarks on introducing the probe and catheter into the Eustachian tube by the nostril," appended to the description of the "engraved representation of the anatomy of the human ear," we are not aware that his writings afford much evidence of his employing injections into the Eustachian tube as an important therapeutical agent. Mr. B.'s nosological arrangement, Dr. Kramer says, abounds in errors and repetitions.

The last English work, treating of the diseases of the ear we have to notice, is an essay, containing "a few remarks on Congenital Deafness, on the Diseases of the Ear, and on some Imperfections of the Organs of Speech," appended to a "*Treatise on the Anatomy and Physiology of the Organ of Hearing,*"

by Mr. Tod. This gentleman devotes two long chapters to the consideration of the causes and treatment of congenital deafness, but he appears to have totally mistaken the proper object and mode of investigation. Instead of drawing inductions from carefully observed and well established facts, he loses himself in speculations, which we cannot otherwise characterise than as crude, inconclusive, and little to the purpose. The treatment proposed by Mr. T. for congenital deafness, when depending on derangement of the structure of the tympanum, is by the introduction of acrid substances, such as ammonia, tincture of cantharides, ether, the mineral acids, &c., to cause such inflammation as will be sufficient, according to him, to rouse in some degree, the reproductive powers of the textures contained in that cavity. And these acrid substances are to be employed to the extent even of inducing suppuration in the cavity of the tympanum. Mr. T. gives four cases, illustrative of this mode of treatment, but they are related in too indefinite a manner to convey much information; and, on the whole, we cannot say that the author has added to our knowledge of the diseases of the ear.

Before dismissing the subject of English medical literature on the ear, we ought to allude to Mr. Swan's observations; and we enter upon this notice with a feeling very different from that which influenced us in speaking of certain of the authors whose works we have been criticising. Mr. Swan, in his Treatise on the Diseases and Injuries of the Nerves, in discussing the diseases of the auditory nerves, expresses his opinion that deafness, and the noises which accompany it, very often depend on the state of the nerves distributed on the membrane lining the tympanum. "He wishes to establish that, in a great proportion of habitually deaf people, the auditory nerves are not affected." We shall hereafter state our opinion of this theory; and must now advert to another. There is at the bottom of the internal auditory meatus a communication between the auditory and facial nerves, which has been pointed out by Swan, Arnold, and perhaps by Köllner. By this communication, Mr. S. endeavours to explain a circumstance, which he considers he has established, viz., that in cases of deafness from some other cause than disease of the auditory nerve, sound is conveyed through the medium of the facial nerve of the seventh pair, and some other nerves connected with it. We must be cautious of admitting the conclusions of even the highest authorities, if we are not assured of their having formed a correct diagnosis, by carefully instituted local examination. That Mr. Swan has not sufficiently attended to this, may be inferred from the circumstance, that he speaks of a case of deafness, which he thought might arise from imperforate Eustachian tube, for no other reason than because noises in the ear, which Mr. S. considers the usual characteristic symptom of nervous deafness, were wanting. He therefore performed perforation of the membrana tympani in each ear, but without any good result. Of the insufficiency of the indication, and the impropriety of the operation in this case, we shall have occasion hereafter to speak.

We must now proceed to examine the practical part of Dr. Kramer's work.

"In the present treatise," says Dr. K., "it has been my endeavour to arrange the diseases of the ear, in a more natural manner than has been hitherto done, to found them on decided organic alterations of the constituent structure of the ear, to avoid all hypothetical and speculative admissions in our arguments; but, above all, to deduce the diagnosis of each form of disease from attention to the actual symptoms, independent of the always doubtful accounts of the patient, and on this sure basis to establish, as far as possible, a simple and effectual method of treatment." (P. 30.)

Before entering on the consideration of individual diseases, we shall first notice what Dr. Kramer says of the pretensions of the principal remedies which have been from time to time vaunted as specifics against *Deafness*, and of the frequency and curability of diseases of the ear in general.

First on the list of Locally Acting Remedies, which have been vaunted as capable of curing deafness, come *electricity*, *galvanism*, and *mineral magnetism*, which may be all included in the same category. Dr. K. designates electricity as the least efficacious of this class of remedies. He examines into the proofs

of the cases adduced by Mauduyt, Cavallo, Le Bouvier, Desmortiers, and Busch, in support of the efficacy of electricity; and he very clearly shows, that not one individual could be said to have been cured, though many were made worse. Itard, speaking from his own experience, says that electricity is without any useful effect on the ear; and in this opinion, Deleau perfectly coincides with him. Experience has shown, that galvanism is as little to be depended on as electricity. As to mineral magnetism, its action is so nearly allied to that of electricity and galvanism, that no better effect was to be expected from it, and the result has confirmed this anticipation. Many cases, indeed, have been published as cures of deafness by mineral magnetism; but it will be found, that what real improvement may have taken place was only temporary, such as have been observed to occur from galvanism, in consequence of the increased irritability excited during the employment of the agent. In most cases, however, the improvement was only apparent.

Of *moxa* and the *actual cautery*, Dr. K. remarks, that, "even on Itard's recommendation of them, we can lay no weight. They are too heroic remedies to be used without having good reason to expect a beneficial result."

"*Blisters* and *tartar emetic ointment* are," says Dr. K., "only indicated in circumscribed chronic inflammation of the auditory passage and *membrana tympani*." He prefers tartar emetic ointment, which he rubs in below the mastoid process, to avoid all risk of injuring that part.

In regard to *issues* and *setons*, Dr. K. says, "setons are of as little value as issues. . . . All patients who have worn a seton have unanimously described the injurious influence of it on the disease of the ear."

There is no disease of the ear in which *douches*, either of water or vapour, thrown into the auditory passage, are indicated: not so, however, as will be seen hereafter, with the douches introduced into the Eustachian tube, by means of the catheter.

All *drops* and *injections*, especially those of a spirituous, acrid, irritating nature, though sanctioned by long use, are pronounced by Dr. K. to be pernicious. All quack medicines for deafness are of this kind.

Of the General Remedies, Russian vapour baths have been much and indiscriminately recommended in diseases of the ear, in consequence of the supposed origin of most of them from cold. But, even supposing this to be the case, surely it is not to be expected that the local malady will be at once removed along with the general disease which may have given origin to it.

Sea-bathing has been as much recommended, especially in supposed cases of nervous deafness, but unfortunately the results have not answered the expectations.

*Warm baths, sulphur, chalybeate, and other baths*, are injurious, if there be any congestion in the head and ears; if otherwise, they are admissible only when a general complaint, existing along with the deafness, urgently requires their use.

*Emetics* are of no use in nervous deafness. They have been used for the purpose of clearing an obstructed Eustachian tube: they may have this effect if there be merely a collection of mucus closing up the mouth of this canal; but, if the obstruction from mucus be more extensive, they are nugatory.

*Purgatives* are admissible only as auxiliary remedies in acute and chronic inflammations of the ear, as of other parts; but they must be considered injurious in nervous deafness.

*Bleeding* ought only to be employed on general principles.

"The treatment by *salivation, abstinence, and inunction*, I believe," says Dr. K., "can never be indicated for any disease of the ear, as such."

*Arnica flowers* in infusion have been vaunted as a specific remedy for paralysis of the auditory nerve from rheumatic metastasis; for the same reason, we suppose, that many other remedies have acquired reputation in particular diseases, — viz. because they happened to be used at a time when the disease, having resisted all medicaments previously employed, began to yield of its own accord.

"If," says Dr. K., "by this exclusive criticism of the general methods of cure directed against the diseases of the ear, it should be supposed that I mean to consider them as altogether isolated, independent of all connexion with the dis-



cases of the rest of the organism, I formally protest against such an inference. On the contrary, it is my deliberate conviction that, in every disease of the ear, especially if of long continuance, the general health of the patient must be most carefully regulated according to the rules of general and special therapeutics; not with the intention or hope, however, of improving, much less curing, in this way, the disease of the ear, which certainly will not succeed; but only in order thereby to clear and level the ground on which the superstructure of the special treatment of the disease of the ear is to be erected." (P. 89.)

After insisting on the importance and necessity of careful local examination in all cases of diseases of the ear, Dr. K. proceeds to remark on the *curability* of the diseases of the ear.

*Tabular View of the relative Frequency and Curability of Diseases of the Ear.*

Name of the Disease.	Incurable and not treated.	Cured.	Relieved.	Uncured.	Total.	
<b>OF THE CARTILAGE OF THE EAR.</b>						
Erysipelatous inflammation . . . . .	...	1			1	3
Scirrhus degeneration . . . . .	...	2			2	
<b>IN THE AUDITORY PASSAGE.</b>						
Erysipelatous inflammation . . . . .	...	17			17	85
Inflammation of the glandular integu- ment . . . . .	3	9	13		25	
Inflammation of the cellular tissue. . .	...	2			2	
Inflammation of the periosteum . . . . .	2				2	
<b>OF THE MEMBRANA TYMPANI.</b>						
Acute inflammation . . . . .	...	1			1	36
Chronic inflammation . . . . .	11	7	17		35	
<b>IN THE CAVITY OF THE TYMPANUM AND EUSTACHIAN TUBE.</b>						
Inflammation of the mucous membrane, with obstruction . . . . .	...	28	6		34	55
Inflammation of the mucous membrane, with stricture of the Eustachian tube	16		3		19	
Inflammation of the mucous membrane, with obliteration of the Eustachian tube . . . . .	1				1	
Inflammation of the cellular tissue of the cavity of the tympanum . . . . .	...		1		1	
<b>IN THE LABYRINTH.</b>						
Erethitic nervous deafness . . . . .	60	21	52	7	140	152
Torpid nervous deafness . . . . .	3	8	1		12	
Deafness and dumbness . . . . .	8				8	
	104	96	92	8	300	300
188 Relieved.						

"We ought not," he says, "to allow ourselves to be imposed upon when we read that Curtis (whose inconceivable ignorance of what has been done in this

department of medicine, and whose crude empiricism in the treatment of diseases of the ear we shall have often occasion to expose,) from the year 1817 to 1829 inclusive, treated in the London Dispensary of the Ear 8,782 persons; of whom, 3,780 were dismissed perfectly cured, 2,497 improved, and only 2,505 without any improvement. In this report there is a total want of all intrinsic credibility. The same improbability exists, nearly to as great a degree, in the works of Wright. The account which he gives of the brilliant results of his practice must strike us as highly incredible, if we only consider his assertion that gargling is quite as effectual as injections in the diseases of the Eustachian tube and cavity of the tympanum! We must therefore withhold our confidence from him when he asserts that he has, out of 1500 patients, cured 496, considerably improved 380, partially 290; whilst, of those remaining, 210 either continued under treatment or had given up attendance, and only 124 had been dismissed incurable. In juxtaposition with these altogether incredible assertions, we place a table in which 300 patients have been carefully arranged according to the different forms of disease under which they laboured, and classed under different heads according to the therapeutical results obtained.

Dr. Kramer commences the second section of his work with some remarks on the classification of the disease of the ear. We have not space to enter further into the subject than to notice his own system, which is natural and comprehensive, being founded on the only sure basis, the difference in structure of the parts affected. "In all diseases of the ear," he says, "it should be our endeavour, by a careful examination of the affected organ, to determine the seat of the disease and the organic relations of the symptoms, as this is the only way by which we can attain to a knowledge of the most suitable and effectual mode of treatment in each individual case." (P. 97.)

He first divides the diseases respectively into those of the external ear, those of the middle ear, and those of the internal ear, as in the preceding table.

The diseases of the external ear are: 1. Diseases of the Auricle, comprising, *a*, erysipelatous inflammation; *b*, scirrhus degeneration; *c*, boils. 2. Diseases of the auditory passage, comprising, *a*, erysipelatous inflammation; *b*, inflammation of the glandular part of the investing integument; *c*, inflammation of the cellular tissue; *d*, inflammation of the periosteum. 3. Diseases of the membrana tympana, comprising, *a*, acute inflammation; *b*, chronic inflammation.

The diseases of the middle ear are; 1. Inflammation of the mucous membrane of the middle ear. *a*, with the formation and accumulation of mucus; *b*, with stricture of the Eustachian tube; *c*, with obliteration of the Eustachian tube. 2. Inflammation of the cellular tissue and periosteum in the cavity of the tympanum: *a*, the acute form of true internal inflammation of the ear; *b*, the chronic form of it.

The diseases of the internal ear are, the two forms of nervous deafness: *a*, with erethism or excitement; *b*, with torpor.

In presenting to our readers what to us seems most worthy of notice in the account which Dr. Kramer gives of these different diseases of the ear, our object will be to give such an abstract of the whole as will convey some idea of the scope of Dr. K.'s work, of the unsparing, but we must confess too well justified spirit of criticism which pervades it; and of the impulse which it seems to us calculated to communicate to the study of the diseases of the ear. He has proved we think, that, contrary, to the generally received opinion, the diseases of the ear are nearly as capable of accurate and fruitful investigation as are those of the eye; and we consider that he has succeeded to a considerable extent in bringing our knowledge of their nature and proper treatment to the level at which our knowledge of the eye has arrived.

We pass over altogether the account of the diseases of the auricle. To form a correct diagnosis of the diseases of the auditory passage and membrana tympani, and negatively of the diseases of the other parts of the ear, it is above all things necessary that the greatest attention should be paid to the investigation of the auditory passage by ocular inspection. To the neglect of this inspection, and to the neglect of the investigation of the state of the Eustachian tube and cavity of the tympanum by means of the catheter and injections, is to be attributed our

very defective diagnosis in this class of diseases, and consequently the inefficiency, not to say injuriousness, of our treatment of them.

"In consequence of the curvature of the auditory passage, the bottom of it and the membrana tympani occupy such a position, that they cannot be seen distinctly, in the usual natural width of this canal. To effect the examination, the patient's head must be inclined strongly to the opposite side, and the ear being directed towards the sun, the auricle is drawn well upwards and outwards, whilst the tragus is at the same time pressed outwards. By this arrangement, the rays of light are allowed to fall on the parts to be examined, provided the auditory passage and membrana tympani are sound. But when morbid changes have taken place in these parts, a particular instrument is requisite, in order to remove the curvature of the passage and convert it for the time into a straight canal, so that the light may easily penetrate to the bottom. Hildanus, as was observed above, first mentioned an instrument for this purpose, under the name of *speculum auris*. But the arms of his instrument have a pyramidal shape unfavorable for the introduction of it into the auditory passage. Since Hildanus no mention of this very indispensable instrument has been made, not even by Itard, Saissy, and Deleau. Jos. Frank, indeed, speaks of a *speculum auris*, without describing it, and Wright rejects as totally deficient in utility Weiss's three-armed speculum; whilst he praises his own instrument as simple but effective, though he does not describe it." (P. 117.)

Dr. K.'s speculum, of which he gives a figure and description, differs from the one in common use in this country only in having the further end more taper, with less of the oval form, and in having a wider funnel-like orifice. The inner surface of the funnel ought to be painted black or corroded, so as to be quite dim. A polished surface, by reflecting the rays of light, confuses the examination. It is of some importance to attend to this, because a contrary opinion seems to prevail; for all the specula we have seen in this country are highly polished on the inner surface of the funnel; nay, we meet with gilded ones, in order, as we are told, that the reflexion may be greater.

"For the examination of the auditory passage," continues Dr. K., "no artificial illumination can equal, much less supersede, the light of the sun's rays. We must therefore always have recourse to them in important cases, such as operations in the vicinity of the membrana tympani. Notwithstanding, however, the failure of all attempts to find a substitute for the rays of the sun, not always at our disposal, enough has been effected to enable us during dull weather successfully to examine the more evident forms of disease." (P. 119.)

After pointing out the inefficiency of the means proposed by Cleland, Bozzini, Deleau, and Buchanan, for this purpose, Dr. K. gives us a description of an improved apparatus invented by himself, the principal part of which is an Argand's lamp; and the great mass of light from this falls upon a concave metallic mirror, whence it is reflected to a convex lens, through which, and through a second convex lens contained in the tube of the apparatus, the rays of light pass so as to be collected into an intensely bright focus, of the size of a two-groschen piece, (a shilling.)

"But whether," (says Dr. K.) "we employ the sun's light or artificial light, the speculum ought always to be had recourse to in important cases. Its assistance is especially necessary to enable us to accomplish the examination with the eye alone, without being obliged, like Itard, Curtis, Wright, Buchanan, Tod, and others, to use the probe. This is improper, partly because it affords no correct diagnosis, but chiefly in consequence of the great delicacy and sensibility of the membrana tympani." (P. 121.)

The number of all diseases has been much multiplied by the practice of considering the different effects of some primary diseases, such as inflammation, nay even certain symptoms, as so many separate and independent forms. The result of this has been great confusion in the whole range of pathology, but perhaps there are no organs in which the practice has been carried to a more vicious extent than in the case of the eye and the ear. "Careful observation," says Dr. K., "has taught me that all the different forms of disease which affect the auditory passage depend on inflammation of its constituent structures, and they are very characteristically defined, according as one or other structure is affected."

The effects of these forms of inflammation have no claim to be considered as separate forms of disease, but naturally come under that which has given rise to them." (P. 125.) On this principle the diseases of the auditory passage really to be distinguished, are those already mentioned, viz. erysipelatous inflammation; inflammation of the glandular part of the investing integument; inflammation of the cellular tissue, and inflammation of the periosteum.

Those great accumulations of hard, dark-brown wax in the auditory passage, which so often produce deafness, are the result of erysipelatous inflammation. "This accumulation of ear-wax," says Dr. K., "has been very unjustly laid to the charge of neglect and want of cleanliness on the part of the patient. It is itself a diseased product, the removal of which no patient can effect, as the naturally very sensitive auditory passage becomes still more so in consequence of the erysipelatous inflammation, and even at its anterior part cannot endure the slightest touch." (P. 129.)

Mr. Buchanan, in his "Illustrations," devotes a chapter to the subject of "Syringing the Meatus." He insists very much on the advantage of employing a syringe with a slender point, in order that there may be a counter-current of the injection, which will force all loose extraneous bodies outwards. He also recommends that the syringe should be no larger than to contain three drachms of injection. He fears that, with a syringe having a larger point, and containing more water, "there will be danger of rupturing the membrana tympani and dislocating the ossicula auditus, from the quantity of liquid thrown into the meatus, and the counter-current of the injection being obstructed by the point of the syringe."

"All this," Dr. K. remarks, "is useless and unnecessary precaution. The water flows out very well in spite of the thick pipe, and brings away with it the loosened ear-wax. No stream of water from a strong ear-syringe can injure the membrana tympani, particularly as the injection is not directed upon it, but upon the hardened ear-wax. The small syringes usually employed for this purpose, are therefore worse than useless, because they contain too little water, protract the operation to an indefinite extent, and, in consequence of their long pipe, there is danger, in restless patients, of pushing it too deep into the passage and causing unnecessary pain, if not injury of the membrana tympani. I therefore use an ear-syringe which is three inches long, contains an ounce and a half of water, and is furnished anteriorly with a pipe three quarters of an inch long, and with an opening wide enough to give passage to a strong stream of water." (P. 132.)

As to the fluid used for the injection, Dr. K. says that any thing but tepid water is perfectly superfluous. He has never seen a case of hardened ear-wax, in which, with tepid water, it was not syringed out in half an hour. (P. 133.)

Inflammation of the glandular part of the investing integument of the auditory passage is what is commonly known under the name of *catarrhal* inflammation of the external ear. From this inflammation, and from that of the membrana tympani, the polypous growths of the auditory passage derive their origin.

"By vascular inspection," says Dr. K., "we discover (in the inflammation we are at present considering) on the walls of the auditory passage, inflammatory redness, and partial swelling, which when it attains a farther degree of development and greater elevation, receives the name of a fleshy excrescence or polypus. These excrescences are either soft, spongy, of a bright red colour, vesicular, bleeding on every touch, sensitive, covered with a copious mucous secretion, pedunculated, globular, or they have a broad basis, almost as hard as cartilage or even as bone, insensible, bleeding little or not at all, and rather of a pale red colour. The inflammatory origin of these polypi has been unjustly called in question." (P. 141.)

Collections of thickened, hardened ear-wax are considered, among many other things, as causes of this catarrhal inflammation; but Dr. K. says (p. 145,) that repeated experience has decidedly convinced him "that even a very long continuance of hardened ear-wax in the auditory passage cannot affect the glandular integument.

"Inflammation of the cellular tissue in the auditory passage, or *phlegmonous inflammation*, is distinguished," says Dr. K., "from the inflammation of the glandular integument by the abscess which always takes place in the former,

while such a termination is altogether foreign to the latter. By its rapid course, and the absence, of examination with the probe, of a curious bony surface, this inflammation is just as decidedly distinguished from the inflammation of the periosteum. It might be more readily confounded with internal inflammation of the ear, which comes on with even more violent symptoms; but there is always this diagnostic mark that the internal inflammation of the ear, at least at its commencement, leaves the auditory passage perfectly free. This phlegmonous inflammation is usually confounded by authors, under the general appellation of *otitis externa*, with the slight catarrhal form of the inflammation of the glandular integument." (P. 172.)

Phlegmonous inflammation of the auditory passage is rather a rare form of disease; it is generally produced by cold.

Inflammation of the periosteum of the auditory passage (*metastatic inflammation*), is always attended by caries, and when any exfoliation of the diseased bone takes place, the ulcerated part begins to heal, but obliteration of the passage, to a greater or less extent, is very apt to take place. As in all analogous cases, the part, even when opened up by art, has a constant tendency to grow together again.

"Even in the most favourable cases," says Dr. K., "it is difficult, not so much to open up the parts which are grown together as to maintain them open." . . . . . We always succeed best by touching the parts with lunar caustic, which, by means of a slender caustic-holder, should be carried through and through the part which has been opened up, in its whole length." . . . "Even after cicatrization of the separated parts, hearing remains very dull, partly because the operation does not restore the natural form to the auditory passage, and partly because the membrana tympani has always suffered from the preceding inflammation, having become thickened." (P. 181.)

*Diseases of the Membrana Tympani.* "The very concealed situation of this membrane," says Dr. K., "has for a long time kept up the most erroneous hypothetical opinions of its morbid states. Under their influence we at one time looked upon a separate diseased state of the membrana tympani as impossible." . . . . "Objective symptoms," he continues, "ought alone to decide as to the diseased state of the membrana tympani, particularly as it is accessible to investigation by our senses in its whole extent. We can observe distinctly whether it is shining or is dim; whether it is transparent or opaque, and this, again, whether partially or in its whole extent; whether it presents its depression, or whether, in consequence of thickening of the membrane, this has become indistinct, or is altogether obliterated, &c." (P. 184.)

Much has been said of a too great relaxation of the membrana tympani: and Saissy supposes that this might be produced by destruction of the tensor tympani muscle by suppuration: while Beck thinks that, by violent sneezing, the tendon of the tensor tympani might be ruptured. All this is hypothetical; and just as groundless and fanciful is the admission of a too great tension of the membrana tympani.

Cleland supposes it probable that, by a violent clap of thunder, noise of a cannon or the like, the position of the membrana tympani may be altered, being forced inwards upon the small bones, and so rendered concave outwardly. The means by which Cleland proposes to remedy this supposed disorder are: first, to oblige the patient to stop his mouth and nose, and force the air through the Eustachian tube into the barrel of the ear by several strong impulses, which will probably push the membrane back to its natural state. But, in case of an obstruction of the Eustachian tube, the second method proposed is to introduce into the meatus auditorius externus, an ivory tube, as near to the drum as can be done, and so exactly fitted that no air can go in or out. The surgeon then taking the farther small end in his mouth, draws out by suction what air is contained in the auditory passage, by which means the membrana tympani, says Cleland, will be drawn back to its natural state, and thus the person will hear as before. This silly speculation of Cleland, which is quoted by Mr. Curtis in his "Essay on the Deaf and Dumb," p. 94, is mistaken by Dr. Kramer for Mr. Curtis's own. Dr. K. therefrom takes occasion to accuse Mr. C. of gross ignorance, for not knowing that the externally concave form is the natural state of the membrana tympani. With

what justice soever Mr. Curtis may be accused of ignorance and pretension in other respects, the charge falls from him in this particular instance, unless we consider his designating the part of Cleland's paper which he quotes, "as containing some ingenious remarks on the construction of instruments proposed to remedy some kinds of deafness proceeding from obstructions in the external and internal auditory passages," as in approbation of all that is therein contained.

Dr. K. denies the possibility of the membrana tympani being torn without previous inflammation, in contradiction to the assertions of Duverney, Lescheven, Itard, Saissy, and Curtis.

"It is true," he says, "that we meet with perforations of the membrana tympani, without the discharge of a mucous or purulent fluid; but, even in such a case, a viscid, mucous, puriform matter in small quantity is always found at the bottom, and the membrana tympani, so far as it is not yet destroyed, reddened, thickened, and opaque. We arrive at such certain results only by means of a close inspection of the auditory passage in bright sunshine, and with the assistance of a speculum; whilst, with the probe, which the above-named practitioners make use of, we never could discover such morbid changes."

In regard to the degree of hearing which may exist along with a perforated membrana tympani, Dr. K. makes the following just observations:

"Many authors, and among them even Itard, are still of opinion, that perforation of the membrana tympani does not necessarily weaken the hearing, an error occasioned by their having judged of the hearing only by the way the patient could carry on a conversation, instead of employing, as a standard of measurement, some determinate sound. Repeated careful observations of such patients as had their membrana tympani perforated, has satisfied me that this morbid state has not indeed for its consequences total deafness, but undoubtedly a greater or less degree of dulness of hearing, according to the extent of the destruction of the membrane, according as it has taken place before or behind the handle of the malleus, and according as it is solely confined to the membrane, or is accompanied by the loss of the small bones or other morbid changes in the ear. I have seen patients who could hear my watch indeed at the distance of five or six feet, but yet not at the distance of thirty feet as a sound ear can. With this slight degree of deafness they were on the whole not much incommoded, although there were to be seen in the membrana tympani holes the size of a pea; whilst other patients could scarcely hear the same watch at the distance of half an inch. In such cases as the latter, however, there must have been, besides the perforation, other morbid changes in the cavity of the tympanum, &c." (P. 192.)

The diseases of the membrana tympani which Dr. K. admits as established are only the inflammatory diseases with their consequences, as opacity, thickening, perforation, purulent secretion, and formation of polypi. In acute inflammation, the membrane is found, on examination, to be blood-red, swoollen, rough as if it were covered with small glands, somewhat projecting, and opaque. Bundles of blood-vessels are seen ramifying in it, and the point of insertion of the handle of the malleus can no longer be distinguished.

"The inflammatory character of this form of disease," says Dr. K., "especially in the milder cases, has been hitherto much overlooked, and, under the name of ear-ache, it has been subjected to the most improper local stimulating treatment. Itard indeed speaks of a purely nervous ear-ache, in which his dread of the local use of opium had been quite groundless, if his so called nervous ear-ache were any thing else but an inflammation of the membrana tympani. This, to be sure, is made worse by opium, and would certainly have been recognized by him as inflammation, if he had not neglected the local investigation of the membrana tympani. . . . I have certainly never observed ear-ache without inflammatory appearances, either in the auditory passage or in the membrana tympani; and therefore, to every one who does not understand how to make, and is not in the habit of making, the examination of the membrana tympani with the speculum, and in bright sunshine, I would deny the right to pronounce an opinion as to the existence of a *nervous otalgia*. . . . Inflammation of the membrana tympani is distinguished from internal inflammation of the ear not only by its greater mildness, but especially by the morbid changes of the membrane perceptible from the very commencement of the disease. Any such morbid appearances are at first

always wanting in internal inflammation of the ear, notwithstanding the most violent feverish symptoms; and, in the farther course of the malady, they occur only when the membrane is threatened with bursting by the accumulated matter, and has also become involved in the inflammatory process." (P. 195-6.)

Inflammation of the membrana tympani seems to be as little known to surgeons from actual examination, as certain of the internal inflammations of the eye, such as inflammation of the capsule of the crystalline lens. And, indeed, we need not be surprised that the diseases of an organ so difficult of access to investigation by our senses as the ear, should be so little known, when the affections of the eye, an organ so conveniently placed for our examination, are yet far from being universally understood by surgeons as they ought.

The acute form of inflammation of the membrana tympani, is much less frequent than the chronic form, and the latter much more commonly leaves behind it other diseases.

Hardened ear-wax, according to Dr. K., has no more share in the production of inflammation of the membrana tympani, than it has been already shown to possess, in causing inflammation of the glandular integument of the auditory passage. "Sometimes, indeed," he says, "after the removal of the ear-wax, blood-vessels are observed running along the handle of the malleus, and terminating at its head; but they always disappear in a very short time, without any assistance from art." (P. 197.)

The effects of inflammation of the membrana tympani are, opacity, thickening, hardening, perforation, polypi, &c.; all of which permanently injure hearing.

We are sorry to be under the necessity of greatly abridging Dr. Kramer's very excellent and interesting discussion respecting the perforation of the membrana tympani. It is not long since this subject attracted much attention, and it is well known to our readers, that it was for a memoir on it, that Sir Astley Cooper had the Copley Medal awarded to him, by the Royal Society. "Indeed," says Dr. K., "so great was the interest which the operation excited when first proposed, that it degenerated into a sort of mania. It was thought that in it was discovered an effectual remedy against deafness of every kind, and even against deafness and dumbness." Even now, we believe, the true indications of the operation, are very imperfectly understood by surgeons in general.

"If the membrana tympani," says Dr. K., "be considerably thickened, quite insensible to the touch of the probe, hard as cartilage, and if the hearing has suffered considerably, there remains nothing to be done for its improvement, but the perforation of the membrane. But, even in this case, the only one which really indicates the operation, we ought to have recourse to it only when both ears are affected in the same manner, with a considerable degree of deafness, or when the second ear, not having the membrane indeed diseased, yet suffers from an incurable deafness. We must, however, even in this case, satisfy ourselves by the most careful investigation, that the ear to be operated upon, does not suffer from any other disease, by which the result of the operation might be rendered negative." . . . "Sir Astley Cooper supposed, that the perforation of the membrana tympani was indicated principally, in cases of obstruction of the Eustachian tube, and in extravasation of blood in the cavity of the tympanum; but, as he does not appear to have been acquainted with the catheterism of the Eustachian tube, his diagnosis of the closure of it was altogether uncertain. . . . But, suppose obstruction of the Eustachian tube and extravasation of blood in the cavity of the tympanum really existed, these morbid states might be treated much more certainly and efficiently, by the introduction of the catheter into the tube itself, than by the perforation of the membrane." . . . "The success related by Cooper, as attending his operations in several patients ought not to lead us to a favourable conclusion, regarding the operation, because the diagnosis was defective, and the respective cases too indeterminately characterised. . . . But as he has evidently had no experience on the subject, his opinions carry no weight with them.

"As regards the indication for the operation, Itard falls into the same error as his predecessors. If he declares somewhat more decidedly than they, that the

operation is admissible, only when there is an *invincible* obstruction in the Eustachian tube, he yet errs, inasmuch as he does not examine whether the obstruction might not really be capable of removal. The single case in which, for thickening merely of the membrana tympani, Itard was induced to perform the operation, was followed by a favourable result, exciting to farther attempts in similar cases. Saissy recommends perforation only in hardening and thickening of the membrane; but in reference to it he does not once allude to the Eustachian tube, and cavity of the tympanum. The only case in which he has performed the operation with success, is so incidentally mentioned, that little value can be put upon it.

"Deleau has discussed this operation very fully, in a monograph on the subject, in which he expresses his opinion, that the operation may be performed with advantage in thickening of the membrane, in obstruction and obliteration of the Eustachian tube, and in obstructions of the cavity of the tympanum." . . . "But his indications for operating, are not more satisfactory than those of his predecessors; and he did not take pains to obtain an accurate diagnosis, by a thorough examination of the Eustachian tube. It is accordingly not surprising, that he should not have obtained any permanently good result worthy of being named in all the twenty-five cases operated on by him. . . . The subject has been handled not less superficially by all other authors who have occupied themselves with it, either theoretically or practically. We must, therefore, repeat, that, with the exception of a single successful case recorded by Itard, *no other* is known, in which the operator was authorised in perforating the membrana tympani. We also repeat, that the only thing which really indicates the operation, is merely thickening of the membrana tympani, unaccompanied by any other disease of the ear. . . . If it should be had recourse to, in these very few excepted cases—and of these the diagnosis ought to be very carefully formed,—we must adopt a method by which the complete removal of a piece of the membrane will be effected." (P. 202, *et seq.*)

Solutions of the acetate of lead, are much recommended and employed by Dr. K., in the affections of the auditory passage and membrana tympani.

"In chronic inflammation of the membrana tympani, whether with or without perforation, I employ, with the greatest benefit, a solution of the acetate of lead. It is poured, either cool or lukewarm, into the diseased ear, two or three times a day. We may, according to circumstances, raise the strength of the solution, from one grain to ten of the salt to one ounce of water: in which latter case, the membrana tympani will be covered by the fine powder of the salt of lead, and the action of it kept up so much the longer." (P. 223.)

We doubt very much, that by this means the action of the salt will be kept up so much the longer, as what is deposited is merely an inert oxide. Moreover, we suspect that opacity of the membrana tympani will frequently result from such practice, especially if there be any abrasion of the surface of the membrane, in the same manner as we find takes place in the eye, on the employment of a wash containing the acetate of lead. If there be any ulcer of the cornea, or any abrasion of the conjunctiva, oxide of lead is deposited on the part, and forms a white speck.

"Instead of the acetate of lead," says Dr. K., "the nitrate of silver, the sulphate of zinc, alum, &c., in solution, have likewise been recommended; but, in my trials of them, these remedies, as well as the pyroligneous acid, in the proportion of one scruple to water one ounce, have always excited painful irritation in the auditory passage, when used in a strong solution; whilst, in a weaker, they had no effect at all. The acetate of lead, removes very quickly and effectually, the disagreeable ammoniacal odour of the discharge." (P. 224.)

*Diseases of the Middle Ear.* "We comprehend under this term, only those diseases which are developed in the cavity of the tympanum and in the Eustachian tube, and which are accessible during the lifetime of the patient, to our diagnosis at least, if not also to our therapeutical agents." . . . "Only inflammation of the mucous membrane of the Eustachian tube, and of the cavity of the tympanum, with its different terminations and consequences, as well as of the cellular tissue lying under every mucous membrane, can in reality be put



down as distinctly marked forms of disease. These are, therefore, alone considered here." (P. 240.)

Inflammation of the mucous membrane of the middle ear, is described under different names by Alard, Itard, Saissy, and Deleau; but, by Curtis, Wright, Buchanan, Jos. Frank, and all other writers, it is either totally neglected or discussed, only as a simple mechanical obstruction of the Eustachian tube. As the Eustachian tube forms one of the most important objects of investigation and treatment to the surgeon, we shall make pretty copious extracts from that part of Dr. Kramer's work, relating to it; more particularly as, with the exception of Deleau, no other writer appears to possess the same practical acquaintance with it.

The tubes which Dr. K. recommends for introduction into the Eustachian canal, are the same as those which were employed by the Montpellier surgeons, as well as Sabatier and Itard. They are made of silver, inflexible, six inches long, and of a thickness varying from that of a crow-quill, to that of a goose-quill, straight except at the anterior extremity, which is bent, for the length of about half an inch, at an angle of 144 degrees, corresponding to the lateral situation of the mouth of the Eustachian tube. The tubes, or catheters, are in their whole length of the same caliber. At their posterior or nearer extremity, they are furnished with a funnel-shaped dilatation, half an inch long, for the purpose of receiving the tube of the injecting syringe, &c. At this dilatation, and in the same horizontal direction with the beak of the catheter, there is a ring soldered to, according to the direction of which we can judge of the position of the beak, when this is introduced into the nose and out of view. The tube is moreover graduated with inches, which is of great advantage in the repeated introduction of it. We pass over Dr. K.'s account of the mode of introducing the catheter into the Eustachian tube, and also the contrivances of Itard, Deleau, and himself, for retaining it in the Eustachian tube during the process of injecting.

"Through the catheter thus fixed," says Dr. K., "lukewarm water was injected into the Eustachian tube and cavity of the tympanum, by Wathen, Douglas, Saissy, Itard, and others, and they supposed they could judge of the state of the middle ear, according to the different sensations thereby produced in the ear, or according to the total absence of each sensation. But these aqueous injections are attended with great difficulties and defects, of which I have sufficiently convinced myself by multiplied experience."

Having stated his reasons for rejecting the aqueous injections, Dr. K. proceeds—

"All these weighty objections led Deleau to the happy idea of employing air, instead of water, for the investigation and treatment of the diseases of the middle ear, by which he has completely attained his object." (P. 250.)

We do not mean to advance any positive claim for Cleland in this matter, but the following quotation from his paper in the *Philosophical Transactions* looks very much like a suggestion of the principle:

"The pipes of the syringe," says Cleland, "are made small, of silver, to admit of bending them as occasion offers, and for the most part resemble small catheters: they are mounted with a sheep's ureter, the other end of which is fixed to an ivory pipe, which is fitted to a syringe, whereby warm water may be injected; or they will admit to blow into the Eustachian tube, and so force the air into the barrel of the ear, and dilate the tube sufficiently for the discharge of the excrementitious matter that may be lodged there." (*Phil. Trans.*)

In order to perform this operation, the air was compressed by Deleau in an apparatus, the construction of which he has hitherto kept secret. Dr. Kramer says, however, that it is very easy to construct such an apparatus; and accordingly describes and figures one, of his own contrivance, in the present work.

After declaring that the objections raised by Deleau against the inflexible silver catheter, are altogether groundless, and that the elastic ones recommended by him, do not deserve the preference Deleau claims for them, Dr. K. comments very severely on the hasty assertion of this author, that the elastic catheter may be pushed into the cavity of the tympanum, and employed as a dilating instru-

ment in contraction of the Eustachian tube. "We here refer," says Dr. K., "to what has been said above of the diameter of the Eustachian tube, which, in its narrowest part, even in the sound state, does not admit the finest elastic catheter, much less in the state of stricture." It is not Deleau only he criticises, but animadverts also on Magendie and Percy, the reporters on Deleau's work to the Institute, for allowing such an assertion to pass without censure.

"After the catheter has been introduced into the Eustachian tube, and fixed by means of the frontlet, if the air-douche is to be employed for the investigation of the middle ear, the patient is placed close to a table, on which he leans the elbow next to it, and in this position he holds with the hand of that side, the pipe of the air-press, previously filled with compressed air. The operator then introduces the metal beak of the pipe into the funnel-shaped dilatation of the catheter, applies his ear close to that which is under examination, opens the cock of the machine, and listens to the sound made by the air rushing into the middle ear." . . . "When the Eustachian tube and cavity of the tympanum are perfectly free and open, the air flowing in strikes without interruption, and with an audible shock against the membrana tympani. When the first shock of so strong a stream of air is over, or, if it was not very violent, we hear, during the continuance of the streaming in of the air, a blowing and rustling in the ear of the patient, which appears to issue out of the auditory passage, and to fill his ear in its whole extent. All variations from this sound, the peculiarities of which can only become perceptible by often-repeated observation, are morbid, and lead to very certain conclusions as to the particular diseased changes in the organization and function of the ear." (P. 257.)

The above extract shows, that auscultation is not neglected as a means of obtaining information regarding the state of the ear; and it is the only instance we recollect in which the sounds to be ausculted by the application of the ear or stethoscope, are produced artificially. Laennec, we believe, attempted to derive aid for the diagnosis of diseases of the internal ear, by listening to the sounds produced, or which he expected might be produced by the entrance of air naturally into it; but he was unacquainted with the method just noticed, which affords a pleasing proof of the great advance of a method of exploration which, on its first discovery, was ridiculed by a large proportion of the profession in all countries. We think it quite possible, that the diagnosis of the diseases of other cavities—e. g. the intestinal canal and bladder,—may also be improved by the auscultation of sounds resulting from the artificial introduction of fluids into them. M. Deleau also speaks of a *bruit sec de la caisse*, and a *bruit muqueux*.

If the air-douche does not penetrate to the membrana tympani, Dr. K. makes use of catgut bougies for opening up the passage. He gives directions for their introduction, which we cannot stop to notice.

In treating of inflammation of the mucous membrane of the middle ear, with accumulation of mucus in it, Dr. K. has the following remarks:

"It is surprising enough, considering the great narrowness of the Eustachian tube, and the frequency of catarrhal complaints in the nose and throat, that the obstruction of the Eustachian tube with mucus is yet on the whole so rare. It certainly occurs much more frequently in moist seasons and in damp climates; as, for instance, in cities on the sea-coast, from which (as Hamburg, Stettin, Swinemünde, Danzig, Memel, Cüstrin, &c.) the greater number of patients of this kind come to me. This being the case, it is astonishing that the English (so called) Ear-surgeons, to whom this disease must occur very often in the foggy climate of London, have scarcely an idea of the proper diagnosis of it, much less of a rational mode of treatment for it." (P. 266.)

Dr. Kramer strongly disapproves of the attempts which have been made to remove obstructions of the Eustachian tube, by sending in injections through a perforation in the mastoid process, or through a perforation in the membrana tympani; and asserts, that the only safe mode of procedure is, by a direct action on the guttural orifice of the Eustachian tube, and from thence on the collections of mucus found in it.

Wathen, Douglas, Saissy, Itard, and Deleau, at the commencement of his

practice," continues Dr. K., "employed aqueous injections into the Eustachian tube, which, however, Deleau afterwards gave up, and confined himself exclusively to the air-douche in the treatment of this disease. I have also for some years, employed the water douche with great advantage; and I still consider it very appropriate, and cannot join in the excessive objections (some imaginary,) brought against it by Deleau. . . . Notwithstanding the undeniably good effects of aqueous injections, I have, however, of late given the preference to the air-douche, on account of the extraordinary facility, convenience, and cleanliness with which it may be managed." (P. 274.)

Inflammation with thickening of the mucous membrane of the Eustachian tube, producing stricture, has been found incurable in the hands of Dr. K.; nor has he found perforation of the membrana tympani of any use in such cases; as the mucous membrane of the cavity of the tympanum is also implicated in the chronic inflammation. The introduction of catgut bougies into the Eustachian tube has not been followed by any permanent benefit. Obliteration of the Eustachian tube must be considered, for the same reason, as quite incurable.

"Saunders and Itard," says Dr. K., "had hopes in this case from perforation of the membrana tympani. The cases which the latter communicates, however, although they have presented a favourable result, prove nothing for the applicability of the operation in obliteration of the Eustachian tube, because such a state of the latter was not in a single instance, diagnostically determined by Itard. In my opinion, perforation is in this case, in particular, to be totally rejected, because the inflammation which has disorganized the mucous membrane of the Eustachian tube, to so considerable an extent, cannot have let the mucous membrane of the cavity of the tympanum escape; whence the result is rendered more than doubtful." (P. 307.)

Inflammation of the cellular tissue and periosteum in the cavity of the tympanum, known under the name of *true internal inflammation of the ear*, presents, according to Dr. K., two forms, the acute and chronic. This is a very dangerous disease, as it may involve not only the whole ear, but also extend its ravages to the membranes of the brain.

"Krukenberg," says Dr. K., "describes under the too general name 'internal inflammation of the ear,' (to which name the catarrhal inflammation of the mucous membrane of the cavity of the tympanum has likewise a just title,) the acute form; the proper phlegmonous inflammation of the cellular tissue in the cavity of the tympanum. It is only to be regretted, that he and his contemporary Abercrombie, to whom we are indebted for an excellent description of the chronic form of this inflammation, have examined in their patients, neither the external auditory passage, nor the Eustachian tube."\* (P. 317.)

*Diseases of the Internal Ear.* As we cannot make any direct observations on the internal ear, we must, in forming our diagnosis, join to the subjective symptoms, negative objective symptoms: that is, we must observe, whether or not, there be any deviations from the natural state of the other parts of the ear, sufficient to account for the diminished hearing.

After rejecting the various hypothetical diseases of the internal ear which have been admitted by authors, apparently only for the sake of fixing on some one part, as the seat of a disease they were quite ignorant of, Dr. K. adds,

"The only undoubted form of disease of the labyrinth,—that is, of the nervous expansion contained in it,—is functional derangement of it, under the form of changed manifestation of activity; in other words, *nervous deafness*. In this affection we have changed, a weakened power of hearing, without any organic deviations in the whole of the ear. The term *nervous deafness*, has been hitherto often enough misused, as a cloak for ignorance in any doubtful, obscure disease of the ear; and it has become so suspected, that we might now be dis-

\* "Abercrombie," Dr. K. adds, "diminishes the value of his observations, by considering the cerebral symptoms as primary, although this view may be easily shown to be incorrect from his own cases." This is a mistake of Dr. K., as Dr. A. maintains just the opposite opinion. See *Edin. Journ.* vol. xiv. p. 301; and *Treatise on Diseases of the Brain*, p. 33. 2d Ed. 1829.

posed rather to run into the opposite extreme, and deny its existence altogether. But this would be equally wrong. The disease certainly exists; although we may doubt the capacity of many who have used the term to apply it rightly. For, as the absence of every organic change in the ear, constitutes the principal condition of purely nervous deafness, we cannot accord the right to decide on its existence, to those who do not understand how to investigate the ear, and especially the middle ear, by the catheterism of the Eustachian tube. For this reason, no confidence is to be placed in any of the English so called aurists, Curtis, Stevenson, Wright, &c.; to whom may be added, the other writers on the diseases of the ear,—Saunders, Swan, Lentin, Beck, Vering, Jos. Frank, and others; even Saissy not excepted. Itard and Deleau alone, by their expertness in the use of the catheter, form an honourable exception in this case.” (P. 332.)

Dr. K. admits two forms of nervous deafness; the one attended by erethism or excitement, the other with torpor. Noise in the ear forms the essential point of difference between the two. The noise in the ear, without exception, belongs to the erethitic form, whilst it is quite foreign to that characterized by torpor. But the noises in the ear are not to be looked upon as a characteristic symptom in any degree conjoined with nervous deafness only, for they accompany many other diseases of the ear. “It follows,” says Dr. K., “that noise in the ear is not of itself a disease, but accompanies the most different diseases of the ear, and that often in a very indeterminate and inconstant manner. Swan, Saunders, Curtis, and others have especially fallen into this error, which has proved the more prejudicial as, on their authority, many patients, merely for the reason that they were troubled with noises in the ear, having been looked upon as affected with nervous deafness, and treated accordingly.” We may add, and patients, merely because their deafness was not attended by noises, have had the membrane of the tympanum in each ear perforated.

For establishing the diagnosis of nervous deafness, we need scarcely remark, after what has been said regarding the examination of the ear, that Dr. K. insists on the most minute local investigation of all parts of the ear, and on the use of the air-douche as a means of exploration.

“In the treatment as in the diagnosis,” says Dr. K., “The English surgeons have deviated the farthest from the right path, although they affirm they have obtained by their method brilliant results. Cleland’s cautious declaration, ‘as for the diseases that are called *nervous*, I must leave them to the learned gentlemen of the Faculty,’ has found no echo among his countrymen. With unheard-of audacity, Curtis recommends, in *doubtful* cases of nervous deafness, purgatives, especially calomel, as long as the strength permits. In decided nervous deafness, that is, in such cases as Curtis, with his very defective knowledge of ear-diseases, considers as nervous deafness, he recommends blisters, antiphlogistic diet, calomel again, and sulphate of magnesia.” (P. 350.)

Dr. K. likewise condemns, although in gentler terms, the remedies advised by Swan, Saunders, Wright, and Buchanan, as being “all discordant to the true character of nervous deafness;” and “nearly quite as objectionable, he says, are the methods which are recommended by Beck, Vering, Jos. Frank, Saissy, and others.”

Deleau abstains altogether from the treatment of persons affected with nervous deafness. He has not even ventured to tread in the path which Itard had indeed struck out for the rational treatment of this form of disease, but which, after a few timid steps, he relinquished.

Dr. K. rejects the two cases given by Itard as examples of the idiopathic paralysis of the auditory nerve, conceiving them to be founded on uncertain paralysis, and boldly and confidently declares “that there is not to be found in any work hitherto a single case of nervous deafness founded on an exact and carefully made diagnosis, and that as yet there has existed no proper treatment of nervous deafness.”

Dr. K. makes known a mode of treatment for nervous deafness, which, if we are to judge by the successful cases he adduces and his own recommendations, we must acknowledge to be one of the greatest accessions to the therapeutics of

the ear which has been made since the catheterism of the Eustachian tube. Though his mode of treatment is strictly local, Dr. K. does not neglect the general state of the constitution, strengthening the nervous system when weak, improving the digestion, regulating the functions of the bowels and uterus, and not even overlooking the condition of the intellectual functions. "But we must not flatter ourselves," he says, "that, by fulfilling these general indications, we shall improve the local affection of the auditory nerve, even in the slightest degree. . . . When the health is altogether unimpaired, as is frequently the case, we must, without delay, have recourse to the local treatment of the diseased auditory nerve." (P. 353.)

This local treatment consists in the introduction of the vapour of acetous ether into the cavity of the tympanum, through a catheter introduced into the Eustachian tube. The vapour is generated, in a proper apparatus, at the common summer temperature. Itard formerly attempted this mode of treatment, but he generated the vapour at too high a temperature; so that, instead of the simple vapour of the acetous ether, an acrid kind of gas was introduced into the ear. This gas acts very injuriously in cases of *stethitic* nervous deafness, although, according to Dr. K., it is the best adapted for torpid nervous deafness.

In illustration of the good effects of this mode of treatment, Dr. K. gives us ten cases, one of which only our limits will allow us to quote here.

"*CASE.* Miss M. Wolff, eleven years old, in other respects quite healthy, had been affected, without any apparent cause, for a long time, with dulness of hearing and buzzing in both ears, for which no remedies had hitherto been employed. Both the external auditory passages, and also the Eustachian tubes, were found quite healthy. Injections of tepid water into the middle ear excited severe pain, which abated only late in the evening. With the left ear she could hear the watch at a distance of six inches, and with the right ear at a distance of two inches only. In January, 1832, ethereal vapours were for the first time introduced daily, alternately into the left and right middle ear; and no other remedy was employed at the same time. At the end of the first four weeks the buzzing in the ear completely stopped, and only returned again for a very short time in consequence of a violent exertion of the body. The treatment was continued without interruption for four months. The patient remained perfectly well in health; she had no occasion to make the slightest alteration in her usual mode of life; and, at the end of that time, the hearing distance on the left side was increased from six inches to eight feet, and on the right side from two inches to six feet. A residence in the country interrupted the treatment for nine months, in the course of which time the improvement which had been gained did not undergo the slightest diminution. In January, 1833, the same mode of treatment was renewed, and was continued (with progressive improvement of the hearing distance,) for the space of five months: at the end of that time the patient could hear the watch at fully thirty feet distance, and might therefore be considered as quite cured. The buzzing in the ears had not again occurred." (P. 361.)

It is to be wished that this mode of treatment, with all the necessary precautions as to diagnosis, manipulations, &c., were put in practice in this country by competent surgeons. How suspicious soever one might feel inclined to be of the great efficacy attributed to it by Dr. K., in some degree its discoverer, the plain statement of the facts which he brings forward forces us to admit that it is a mode of treatment of the highest value.

We remarked in a preceding page that Mr. Swan wishes to establish that, in a great proportion of habitually deaf people, the auditory nerves are not affected. He thinks that, in many such cases, the deafness is owing to a thickened state of the lining membrane of the cavity of the tympanum, involving the small branches of the tympanic nerve. We are of opinion that this theory of Mr. Swan's accords very well with the good effects derived from Dr. Kramer's practice in nervous deafness just noticed: as it appears probable that the acetous vapour may act directly on the tympanic nerves.

The fourth chapter of the second section of Dr. K.'s treatise is devoted to the consideration of Ear-trumpets; and the fifth and concluding chapter to Deaf-

dumbness. In the latter chapter, Dr. K. enters into a critical examination of all the cases which have been published from time to time as cases of cured deaf-dumbness, and sums up the whole by the following declaration: "After this complete examination of all the accounts of cured deaf and dumb, we dare decidedly assert that, as yet, no individual deaf and dumb person has been really cured; that is, has been brought into such a state that he, as in the case of a sound hearing person, could, by means of the sense of hearing, hold uninterrupted conversation with his fellows under all circumstances." (P. 399.) The so called cases of cured deaf-dumbness, Dr. K. contends, are only cases in which the person had been taught to speak and understand what was said to him, by closely watching and imitating the motions of the lips of his instructor or other person addressing him. The hearing has in no case been in any considerable degree restored.

After the extensive analysis which we have given of the treatise of Dr. Kramer, it is hardly necessary for us to recommend it in the strongest terms to our readers. It is unquestionably, taken as a whole, the most valuable work we possess on the subject of diseases of the ear generally; and, after the labours of Itard and Deleau, it must be regarded as contributing more to the progress of acoustic surgery than any other modern publication.

Since the preceding pages were written, we have the satisfaction of knowing that a translation of the whole Treatise of Dr. Kramer has been undertaken by a scientific gentleman, already distinguished in his profession, and will be speedily in the hands of British surgeons. We would fain hope that the accomplished translator is destined to redeem the character of auricular surgery in this country.—*Brit. and For. Med. Rev.*

## PATHOLOGY AND THERAPEUTICS.

### ON THE CACHEXIA AFRICANORUM.

BY JOHN FERGUSON, M. D.

The characteristic symptoms are given to the Cachexia Africanorum either by the deficiency or by the vitiated state of the blood, though I have seen it retain its inflammatory or pyrexial character to the last. The strength is lost; the muscles are soft; the expression of the countenance is dull, and heavy, and desponding, the colour of the skin changes from a deep black to a yellowish brown; it loses its gloss, is dry and cold and flaccid; the nails are white; the hair becomes lighter in colour and dry; the inside of the lips, the gums, the tongue, the palate and pharynx are more or less deprived of their colour, sometimes indeed they are colourless; the palms of the hand are white and dry; the backs of the hands are swollen; the carotids are seen beating violently, and the jugulars are generally pulsating; the heart, even when the body is at rest, sometimes beats with inordinate force and frequency; and, on the least exertion, it assumes a jerking action and strikes forcibly against the chest, and gives out a beffows' sound; the pulse at the same time has a sharp jerking beat and is much accelerated. Walking a few paces brings on dyspnoea or anxiety, a palpitation of the heart that is visible all over the chest and in the epigastrium: rapid and strong pulsation in the carotids; and if the exertion be continued the dyspnoea is fearfully increased, and a state resembling asphyxia eventually ensues. The eyelids are swollen in the morning and the countenance acquires a transparent appearance. At the close of the disease effusion takes place in the cellular tissue of the skin and in the cavities. There is often considerable œdema of the face from an early period. The belly is tumid, the appetite may be voracious or entirely lost, the digestion is greatly impaired and the motions are light coloured and sometimes earthy. There is often an irresistible desire to eat all kinds of earthy matter, such as decayed limestone, marl, the plaster on walls, and when these cannot be had, the dust on the floor, or the common earth on the ground. Calcareous earth is preferred, and

I recollect seeing a considerable excavation on the side of a hill along which passed the public road, where the negroes on the neighbouring properties were in the habit of supplying themselves with an absorbent earth to allay the cravings engendered by the cachexia, or perhaps by other gastric disorders. The blood drawn from a vein looks like muddy claret and water, and when it has stood for some time exposed to the air, the coagulum is found to be loose and of a very dark colour, as if the oxygen of the air did not exert its usual effect upon it.—*Jamaica Physical Journal, February and January, 1836.*

### ON CERTAIN PATHOLOGICAL CHANGES IN THE ARTERIAL SYSTEM.

BY M. BIZOT. (*Thesis.*)

The memoir of M. Bizot on this subject was composed under the auspices of M. Louis, and is the result of the examination of about 160 hearts and arterial systems. The following are the principal conclusions arrived at:—The red colour of the internal membrane of the arteries, without other change, must not be considered as morbid. The alterations which were found are divided into those whose progress was primarily acute, and those primarily chronic. Of the former there is but one, which is an exudation more or less thick, of the appearance and consistence of albumen, rosy or transparent, without colour, and very adherent to the inner membrane. From tracing the transformation of this exudation, M. Bizot believes that the cartilaginous patches have commenced in this manner, and he rejects the opinion of M. Andral, that these patches are developed between the inner and middle membrane. When this albuminous exudation is secreted in isolated patches, its formation does not appear to produce general symptoms; but, if it attacks a large surface, (as the whole aorta, for instance,) formidable symptoms appear, as the author has observed in three cases which he has reported. In these three cases the symptoms were similar: œdema accompanied with febrile disturbance, without symptoms which could be referred to the heart, or the principal organs essential to life; and, on examination, the same lesion was discovered in all, a false membrane lining the whole inner surface of the aorta. This disease is very different from acute aortitis described by MM. Bertin and Bouillaud. The changes of a chronic kind are either common to the whole arterial system, or only affect the arteries of the limbs. The first commences by small, yellowish points, which, developed between the inner and middle membrane, may experience many transformations. According to M. Bizot, the changes described by authors under the names of spots, pustules, abscesses, atheroma, steatoma, &c., have all the same origin, which is a little almost imperceptible spot developed without any trace of inflammation between the most internal coats of the artery, and terminating alike in ulceration. The spots may also be transformed into bony matter, but without passing through the state of cartilage. In the arteries of the limbs, ossification appears to take place in the substance of the middle coat.—*Archives, Gen. de Med. Julliet, 1836.*

### ON THE EFFECT OF REPEATED LOSSES OF BLOOD ON THE CONSTITUTION OF THE BLOOD-VESSELS.

BY DR. HERMANN NASSE.

We have not yet had an opportunity of seeing the original work of Dr. Nasse on the physiology and pathology of the blood, which he has just published, and in which he has consigned the result of observations and experiments carried on by him for no less a period than ten years. The following are some of the principal results ascertained respecting the influence of loss of blood on the state of the fluid, as recorded by Dr. Albers in the Hanoverian Annals.

1. The blood flows from the vein with less force and in a smaller stream.
2. Its temperature is diminished.
3. The blood cools more rapidly in the first minutes.
4. Its colour is brighter.

5. Its specific gravity is diminished.
  6. The coagulation takes place sooner.
  7. The serum separates frequently more speedily from the clot.
  8. The disposition to form the fibrinous coat is increased.
  9. The quantity of water is increased.
  10. The coagulum is less firm.
  11. The specific gravity of the serum is diminished.
  12. The powder-like sediment is augmented.
  13. The height of the remaining cruor in "whipped" blood is lessened.
  14. The blood putrefies more speedily.
  15. The fibrinous substance frequently increases, but becomes tenderer, and is more readily decomposed.
  16. The quantity of globules is diminished.
  17. The quantity of iron is diminished.
  18. The albuminous portion of the blood increases somewhat.
  19. The quantity of fat in the serum and in the fibrine is increased.
- Hannoversche Annalen für die gesammte Heilkunde.* B. 1, Heft. 3. 1836.

### ON THE OXIDE OF BISMUTH IN YELLOW FEVER.

BY J. MAGRATH, ESQ.

Believing that I have met with a medicine capable of exerting a decidedly beneficial influence in that stage of yellow fever, in which every remedy hitherto used has either totally failed, or at the most has been so very precarious in its effect, as to leave it doubtful whether the patient was indebted to the means employed or to nature alone for the relief obtained, I beg leave to make it known. The remedy I allude to is the oxide of bismuth, and the period of the complaint, the latter part of the first or the commencement of the second stage of the fever, in which sub-acute inflammation of the mucous membrane of the stomach exists, which I believe is always the case previous to the appearance of black vomit. I have successfully employed the remedy in two instances after this last symptom has set in; nevertheless, I fear it will seldom be of use when the discharge of that fluid is at all considerable, as then it is to be apprehended that too great disorganization has taken place; but where inflammatory action has already been actively combated by general and if necessary topical bloodletting, by the use of mercurials, a blister, &c., I cannot assert with confidence that it will, in many instances, save the life of the patients, when none of the other remedies hitherto employed have any chance of succeeding. I have generally been in the habit of combining the carbonate of soda with the bismuth, and giving them in doses of three grains each every second hour as long as I saw an indication for their continuation.—*Jamaica Physical Journal, March and April, 1836.*

### HISTORY OF A DEAF AND DUMB PERSON; WITH THE APPEARANCES ON DISSECTION.

BY DR. BERGMANN.

A man was found hidden in a barn at Reinhausen, in the kingdom of Hanover, in the year 1806. All attempts to make him give, by word or sign, any account of himself, of his former life, abode, or circumstances, were vain. When interrogated, he laughed unmeaningly, or gazed about him fixedly, or uttered unintelligible sounds. He was of the middle size, thin, well made, and about twenty years old. All inquiries respecting him throughout the country having been without result, he was consigned to the workhouse at Celle. Here he lived till his decease, in 1833.

Soon after his arrival at Celle, he manifested signs of intelligence sufficient to prove that neglect and want of education had greatly contributed to render his case intractable. He was mild, good-natured, attentive and docile, obeyed at a sign, was extremely willing, and not unskilful in domestic service. He appeared cheerful and contented, and was very seldom out of temper. He had totally lost



the faculty of hearing, and could only utter one or two sounds. However, he contrived to make himself tolerably well understood by gesticulation. Although, during the latter years of his life, his general appearance was healthy, he was still unusually weak, and suffered from shortness of breath. Dr. Bergmann has remarked that the deaf and dumb are peculiarly subject to weakness of the pulmonary organs; which weakness he easily deduces *a priori*, from the relation of the latter to the organ of hearing, and from the intimate nervous connexion.

The patient died of a fever, with pulmonary symptoms, June 6, 1833.

The abdominal viscera were found, at the post-mortem examination, to be free from disease. In the thoracic there were pathological changes, corresponding to the symptoms manifested during the last years of the patient's life. The brain was in a normal condition, and its different parts exhibited no deviation from their usual structure. The external ear was of a natural conformation, and the meatus externus and membrana tympani presented no unusual appearances; but the membrane which lined the hollow of the tympanum was of a spongy, sarcomatous nature, and that which covered the bones of the internal ear was similarly affected, so that their motion might have been somewhat impeded in consequence. In the hollow of the tympanum of both sides there was a quantity of thickish mucus. A hard concretion, about the size of a mustard-seed, covered the fenestra rotunda on the left side. The semicircular canals were of a natural form, but degenerated internally; they seemed to have contained some fluid, but in very small and insufficient quantity. The thin, transparent lining membranes, (ductus semicirculares Scarpæ,) the ampullæ, and the nerves, could not be distinctly discovered on either side. The defects here were evidently of a nature to have interfered materially with the exercise of the function of the organ. They could not have been affected by the process of examination, for the appearances presented were precisely similar on both sides. The cochlea was found in its usual condition, and appeared to be properly supplied with baths. Whether the defects visible in the semicircular canals were congenial or the result of disease, it was of course impossible to ascertain.

Dr. Bergmann contrasts with this case one of decided idiotism; that of a dumb girl, whose forehead was flat, head compressed on both sides, face without any expression, mouth constantly open, so that the saliva was always flowing out, look unmeaning, &c. In this case the brain was imperfectly developed, but all the organs of sense were of a natural conformation.—*Hannoversche Annalen für die gesammte Heilkunde*. B. i. Heft. 1. 1836.

## TIC DOULEUREUX CURED BY THE EXTERNAL APPLICATION OF TARTRATE OF ANTIMONY.

BY DR. HAUSBRANDT.

A woman, more than sixty years of age, had suffered for many years from face-ache, the severity and long continuance of which almost reduced her to despair. As soon as the pain of the face ceased, the patient felt comparatively well: when the pain came on, which was always suddenly and without any ostensible cause, the muscle of the face twitched, and the eye of the affected side was closed; the whole face became remarkably pale, and the features indicated severe suffering. As no particular circumstance capable of inducing the attack, excepting perhaps taking cold, could be discovered, the treatment was altogether empirical. A considerable number of remedies, such as are usually employed for this complaint, were tried,—especially frictions, vesicatories, narcotics, carbonate of iron,—but the paroxysms returned with greater frequency, and the patient not only lost flesh, but her condition seemed desperate. Dr. H. prescribed the following plaster, which was applied over the whole of the affected side of the face:

R. Emplast. Resinæ flavæ, ʒi.

Resinæ flavæ, ʒss.

Terebinthinæ venetæ, ʒiij. Liqat. adm.

Tart. Antimonii, ʒjss. ut fiat Emplast.

When this had remained on the face twenty-four hours, the patient experienced an itching, burning sensation throughout the spot covered by it, but the face-ache was relieved. At the end of several days the plaster was taken off, when the entire half of the face was found covered with pustules, which gave a good deal of pain, but which were very bearable in comparison to the former pains. The sores gradually healed by the application of simple dressing, and up to this time (three and a quarter years,) there has been no recurrence of the complaint.—*Medicinische Zeitung*, 6 Jan. 1836.

#### CURE FOR DRUNKENNESS.

A native of Norway, aged forty, who had from his youth been accustomed to dram-drinking, was attacked with delirium tremens. His medical attendant, to cure him of his dangerous propensity, prescribed the daily use of a mixture of two drachms of sulphuric acid and twenty-four ounces of whiskey. The result was remarkable: in three months' time he got such a dislike to all kinds of spirituous liquors, that he could not bear to swallow a drop of any thing stronger than beer. The dose of the above mixture taken was four wine-glasses daily, and the cure had been of a year's standing at the time of the communication of the case.—*Eyr. Tiende Bind. andet Hefte*.

#### STUTTERING OCCASIONED BY WORMS.

BY DR. SCHULTZE.

A boy, aged five years, who hitherto could distinctly pronounce even the most difficult words, and readily communicate his thoughts, all at once began to stutter. As no organic defect could be perceived, Dr. S. thought that the impediment might be occasioned by worms, as he had often noticed an entire loss of speech, lasting many days, to depend upon this cause. He therefore ordered an electuary composed of jalap, semin. cinæ, tanacet., and magnes. sulph., with syr. mannæ, to be given. By this medicine, a large quantity of the *ascarides lumbricoides* were voided, and the boy was again restored to the free use of his speech.—*Med. Zeitung*, 6 Jan. 1836.

#### ON A NEW MODE OF TREATING HERPES, (*Dartres*.)

BY DR. BUGLIARELLI.

The success of the following treatment of herpetic eruption is confirmed by thirteen cases, in which a cure was speedily effected.

Five pounds of sublimated sulphur and eight of common oil are to be mixed in a glass matrass, with a large mouth, well luted. They are then to be gradually heated in a sand-bath, the heat being increased until the sulphur is quite liquefied. The mixture, when reduced to two pounds, is to be allowed to cool, and then, after five pounds of alcohol are added, it is to be again reduced to two pounds, by the same means; after which, on separating the residue, a spirituous oil is obtained which, when united to an equal quantity of muriatic acid, forms the antiherpetic liquor of the first degree. This is fitted only to the chronic form of the disease, and is to be used occasionally in the course of the treatment. One part of this liquid united with two parts of the distilled water of elder-flowers constitutes that of the second degree, which is useful in old indolent forms of the disease. The addition of three parts of elder-flower water to one part of the liquor of the first degree, constitutes that of the third degree, when it may be employed in recent cases and when the skin is very sensitive. Half a pound of the first liquor, mixed with a similar quantity of the second, is sufficient to cure an eruption which occupies the whole cutaneous surface, and that within two months.

This remedy is used internally as well as externally, its action being aided by

other means. The author commences his treatment by purging with Epsom salts; on the third day he prescribes warm soft-water baths, diaphoretics, and Ethiop's mineral. The warm bath is repeated twice a week, and in it are boiled one pound of sulphur and half a pound of quick lime. The diseased spots are touched daily, by means of a small brush, with the liquid.

If the patients would not submit to the use of the protosulphuret of mercury, the anti-herpetic liquor of the first degree was substituted; the dose being from ten to thirty drops in a pound of the diaphoretic decoction. The diet should be more vegetable than animal, and saline and acidulous substances should be avoided.—*Giornale delle Scienze Mediche, per la Sicilia.* 1835.

### ON SULPHURET OF LIME IN DISEASES OF THE SKIN.

BY DR. SAVARDAN.

Dr. Savardan has employed the following ointment in chronic diseases of the skin, for the last twelve years, with very great success: eight parts of lard are intimately mixed with one part of sulphuret of lime; and one drachm is directed to be rubbed into the palms of the hands for one quarter of an hour night and morning. Dr. S. has given short notes of thirty cases of chronic diseases of the skin of various kinds affecting different parts of the body, all of which gave way to this ointment, used in the manner specified. All were cases of long continuance, and the treatment was of course protracted; one or two yielding in rather more than a month, others in three, four, seven months; whilst in others the frictions were persevered in from one to two years.—*Journal des Connaissances Medico-chirurgicales, Janvier, 1836.*

### UTILITY OF NUX VOMICA

IN TREATMENT OF INCONTINENCE OF URINE, AND WEAKNESS OF THE GENERATIVE ORGANS.

Incontinence of urine, whether it occurs in young children, or in old persons, is very generally dependent upon a relaxation of the sphincter vesicæ. The children, who are most liable to this annoying complaint, are of a weak lymphatic temperament, and usually exhibit the signs of a scrofulous and rachitic tendency. Laughing, coughing, &c. are often sufficient to cause the urine to escape. It is well known how apt these children are to pass urine in bed. Various remedies have been recommended by different practitioners. M. Dupuytren had great confidence in the daily use of the cold plunge bath. (This too was his favourite remedy against chorea.) MM. Baudelocque and Guersent also, two good authorities on the diseases of children, approve of cold bathing. The late Dr. Underwood recommended sea-bathing; and M. Lallemand of Montpellier, informs us that no case of incontinence of urine in young persons has ever resisted the continued use of aromatic baths. These baths are prepared by infusing several handfuls of some of the labiate order of plants, called the "aromatic species," in boiling water, until it becomes of an agreeable coolness. Just before the child is put into the bath, a wine-glassful of brandy is to be mixed with it.

M. Baudelocque has lately tried at the Hôpital des Enfants the occasional introduction of a catheter into the bladder with good effect. Blisters and electricity also have been found of utility. The internal remedies, which have been most highly praised, are cantharides and nux vomica. Cantharides may be administered in the form of tincture—from five to twenty drops for a dose—or of the powder in pills. The formula used by M. Seiger is the following:—R. Pulv. cantharid. gr. vj. Extract. boraginis, ℥ij. Misce et divide in pil. xxiv. —one of these to be taken every night. More lately the extract of nux vomica has been strongly recommended by a number of physicians in France. A case was published by M. Mondiere in the Archives Générales, which attests the great efficacy of this drug. A young female, 20 years of age, had been affected

with nocturnal incontinence of urine, since she was six years old. The following prescription was written for her. R. Extract. nucis vomice, gr. viij. Oxydi ferri nigri, ʒj. M. et in pil. xxiv. divide. One pill was ordered to be taken three times daily. The incontinence had ceased before she had taken all the pills. The use of them however was continued for two or three weeks longer, to prevent any relapse of the complaint.

M. Lafaye has reported in the *Journal de Med. de Bordeaux* the case of an old man, who had been long distressed with incontinence of urine, and in whom a cure was effected in the course of seven weeks by the use of the extract, given in doses of from four to eight grains daily.

MM. Trousseau and Pidoux treated successfully in the *Hôtel Dieu* a case of paralysis of the bladder and of the rectum, which had been caused by an injury of the spine. These two physicians, in a well-written memoir on the medicinal virtues of the nux vomica published in the *Journal des Connoissances Medico-Chirurgicales* for May last, allude to its effects on the organs of generation, and report the case of a man who had been affected for a length of time with complete paraplegia, accompanied with general trembling: the thoracic and abdominal limbs, the bladder and the rectum, had quite lost their contractility, although the sensibility of these parts remained. From the commencement of the illness, the excitability of the generative organs had been destroyed. Under the continued use of the nux vomica, the paralysed parts recovered their motility, the tremors ceased, and the patient began to have erections of the penis.—These authors mention the particulars of another case somewhat similar, but not so severe, in a middle-aged man; and in him too the effects of the nux vomica on the penis were indubitable: “nous sommes parvenus à lui donner une virilité.” The pharmaceutical preparation, which MM. Trousseau and Pidoux prefer, is the fresh alcoholic extract. The dose varies from one to fifteen grains per diem. The alcaloid—strychnine—is much more powerful. It is associated in the nut with another alcaloid, which has been called Brucine, and with an acid to which MM. Magendie and Pelletier gave the name of Igasuric. The same principles exist, but in different proportions, in the *St. Ignatius bean*.

#### STATE OF MEDICINE IN CHILI.

The following interesting observations on the diseases and state of medicine in Chili, are condensed from Professor Poeppig's “*Travels in Peru, Chili, and on the River Amazon*.”\*

“The population of Chili is rapidly on the increase, owing to the many advantages enjoyed by the inhabitants in their political position, and also to the circumstance that they are very little exposed to the diminishing influence of disease. Indeed, whatever has been said by earlier travellers of the remarkable healthfulness of the climate, may be credited in its fullest extent. Neither the extreme aridity of the northern provinces, nor the long-continuing and severe rains in the southern, would appear to exert any particular influence on the duration of life or on the health of the natives. In Mendoza and San Juan, which are only separated from Chili by the chain of the Andes, all classes of the inhabitants suffer severely from scrofula, and cretinism is not infrequent; in Chili, on the contrary, the latter is entirely unknown, and some traces of the former are only occasionally observed among the residents of the northern parts of the country at the foot of the Andes. The foreigner who makes a lengthened stay in Peru may regard himself as fortunate if he escape a tertian intermittent, which will frequently bid defiance to the most careful and judicious treatment. In Chili, on the other hand, there is no fear whatever of this disease, indeed,

\* This excellent work was published not long ago, and is the subject of a highly laudatory article in a late number of the “*Foreign Quarterly Review*.” The author is a talented, observant, and erudite man.—*Med. Chir. Rev.*

many Peruvians affected with it come yearly into Chili with the view of regaining their health. The regularity of the meteorological phenomena, the gradual manner in which changes of temperature take place, the purity of the water used for drinking, the constant winds, and the absence of marshes and damp woods, are the main causes to which the Chilians of all grades are indebted for the particularly good health they enjoy. The infectious diseases occasionally introduced soon lose their virulence under the sky of Chili. The contagious putrid fever of Guayaquil is only remembered to have once appeared at the commencement of the present century in some of the northern seaports. Small-pox alone is of frequent occurrence, and the fatality occasioned by it is sometimes considerable. The opinion is commonly entertained that this disease always comes from Peru, probably because it generally makes its first appearance at some seaport station. Epidemics of small-pox usually occur towards the end of the winter, and from July to November, and it is observed that they assume a more malignant character as the weather becomes fine and warm, and the intervals of rain are longer. The mode of life of the lower classes, and the great want of cleanliness in their habitations, are circumstances favourable to the propagation of the disease; and under this head we must not omit to mention the deplorable maltreatment experienced by the sick, who are confined in the most secluded corner of the house, and dosed with all kinds of rubbish, large fires are lighted, all access of fresh air is carefully guarded against, and the poor patient almost smothered under woollen cloths—a proceeding, it may be remarked, which is observed in almost every case of illness. About 30 years ago, the Spanish government transmitted cow-pox matter to Chili by a man-of-war, but the indolence of the inhabitants has hitherto formed a serious obstacle to the introduction of a general practice of vaccination. Companies, supported by the government, are now instituted; their object is to extend vaccination, and this benefit is conferred on the poor gratuitously. At eight localities, a vaccinating physician has been stationed, with a yearly salary of from 240 to 480 ducats, and one of these gentlemen, named Alvear, fortunately discovered the vaccine pustule in the cows of Chili. In the years 1828, 1831, and 1832, an epidemic of a peculiarly malignant character prevailed, and the people, driven by fear, came in great crowds to be vaccinated, so that from 1830 to 1832, the total number of those vaccinated amounted to 37,834. The Indians suffer far more from the ravages of small-pox than the Chilians.

“Acute diseases seem on the whole to occur but seldom, with the one exception of typhus, which here, however, is not wont to destroy the powers of life so suddenly as in other countries. In the towns and cities the mortality is greater than in the country. With respect to chronic affections, the secondary symptoms of syphilis are of the most frequent occurrence; in fact, lues venerea may be considered epidemical in Chili; yet such is the beneficial influence of the climate, that in this country, as indeed throughout the whole of South America, this disease, formidable as it is in northern Europe, is almost entirely divested of its terrors. The countryman pays attention to his diet, drinks infusion of sarsaparilla, and not infrequently recovers completely without the use of metallic remedies. In large towns, however, the disease is not so easily removed, which is partly to be ascribed to the empirical treatment adopted; for here, as in all other countries, how remote soever, of the extra-European world, LEROY’s celebrated panacea plays a very prominent part, and many other nostrums of Spanish origin are also high in favour. Among the Indians of Chili, lues is not common, and it does not appear to have been ever communicated to the races on the eastern side of the Andes.

“It would seem that with the spread of civilization in Chili, diseases heretofore unknown, and which we may feel little disposed to regard as a consequence of our social condition, were at the same time introduced. Thus it is a fact that scarlet fever was not known up to 1831, when it suddenly broke out as a violent epidemic. Yet it was mild, for according to the report of the protomedicus, among 547 cases, there were only 25 exhibiting a malignant type (under the form of *Febr. scarlat. miliaris*), in which typhoid symptoms supervened. Of

the latter seven or eight died, but of the whole number only a twelfth part terminated fatally.

"The science of medicine has hitherto made but small advances in Chili, and it is only within a very recent period that really competent men have begun to enjoy some portion of public esteem. Twenty years ago medicine was practised by men of colour and the most ignorant quacks, the hospitals were entirely under the control of the monks, and the few well-informed physicians, those, namely, who had received an European education, found in Lima a more lucrative field for their exertions than was offered to them any where in Chili. This state of things, however, no longer obtains, for the number of physicians is now even greater than necessity requires, and there is a college at Santiago at which medicine is taught, although on a somewhat compendious plan. Still there is a scarcity of educated practitioners in the country, where the healing art is chiefly exercised by matrons and old Indian women. The country people are tolerably familiar with the virtues of the rather numerous indigenous plants; but to many of these properties are attributed which the individuals in question do not really possess, and many other remedies, supposed to be of great efficacy, are solely indebted for the estimation in which they are held to a credulous superstition. When any particular part of the human body is the seat of disease, the remedy is sought for in the corresponding part of some animal, variously prepared; thus, for ophthalmic disorders, the carbonized eyes of birds of prey are administered, the claws of the condor are given for gouty pains of the hands, and the flesh of the smooth-skinned lizard for scurfy affections of the skin. For the treatment of ordinary cases, the simple materia medica of the country suffices."—*Poeppig's Reise in Chile, Peru und auf dem Amazonenstrom*. S. 524—531.

#### PRACTICE OF MEDICINE AMONG THE CHINESE.

At a meeting of the Royal Asiatic Society, in London, a paper written by the Rev. C. Gutzlaff, was read on Chinese Practice of Medicine:

"It affords a curious view of the attachment of that extraordinary people to ancient habits. According to them the science was invented by Shin-nong, one of the most ancient emperors, who may be reckoned, perhaps, as a mythological personage. This beneficent monarch studied the properties of plants, and made many useful discoveries of their value in curing diseases: his successors in the science have added to his probably useful observations a great number of theoretical rules. They have divided all the diseases which human nature is heir to, into certain classes, each of which is under the dominion of one of the cardinal points; and they prevail in their turns, as each cardinal point is in the ascendant. There is another and equally important division of diseases into the five elements: when all the elements are in a proper degree of equilibrium, the body is in a healthy state; but when any one of the five has an undue predominancy, the part of the body which is under its especial influence suffers accordingly. There are, also, a great number of rules to be observed, on the colour of the face, the state of the pulse, &c. &c.; and in all this the physician is not allowed to improve by his own experience, but he must follow the rules laid down by the ancients. It seems there is considerable danger in departing from this regulation, not to the patient, but to the physician; for, if a patient dies under the care of a medical attendant who treats according to classic rule, the inference is that every care was taken on the part of the physician to insure success, but that the case was, in fact, desperate. If, on the other hand, the same event should ensue when the ancient mode of treatment has been departed from, the physician would risk being proceeded against for manslaughter. It appears, on the whole, that the character of a physician in China is not very respectable, and that the profession is taken up by any one who is unsuccessful in literary or other pursuits; while that of a surgeon is, from the great objection of the Chinese to operations, almost unknown. We may except, however, the practice of acupuncture and the moxa,

which have both been in use among the Chinese for an indefinite period, and were, without doubt, learned by Europeans from them. The paper concluded with the observations of a Chinese author on medicine, that, by a proper attention to diet and conduct, all medicine would be unnecessary; but that the bad propensities of mankind had entailed so many evils upon them, that the use of it had become a necessary evil."

#### DECREASED RATIO OF MORTALITY IN ENGLAND.\*

"THE Tables of Mortality that have been most commonly used in England, in calculating insurances on lives, &c., are,—that formed by Dr. Price, from observations made at Northampton; and that formed by Mr. Milne, from observations made by Dr. Heysham, on the rate of mortality at Carlisle. The latter gives a decidedly lower rate of mortality than the other; and it is seen, by the returns of the ages of nearly 4 millions of persons who died in England and Wales between 1813 and 1830, that the mortality, as represented by it, does not differ materially from the actual rate in most parts of England; though it was not to be supposed that a table founded on so narrow a basis should give a perfectly fair view of the average mortality of the entire kingdom.

"In computing tables of mortality, males and females ought always to be distinguished. The probable life of the latter, at all periods from infancy to old age, very considerably exceeds that of the former.

"Supposing the burial registers to have been all the while about equally accurate, it appears that, during the 5 years ending with 1800, 1 in every 48 of the population died annually; during the 5 years ending with 1810, the ratio of mortality was 1 in 49; during the 5 years ending with 1820, it was reduced to 1 in 55; and during the 5 years ending with 1830, it again increased, as already observed, to 1 in 51.

"It may be, and, indeed, frequently has been, supposed that this diminution in the proportional number of deaths indicates a corresponding improvement of human life. Such, however, is not the case. No conclusions of this sort can be drawn, unless allowance be made for the increase of population; for it is plain that, if the population be progressively augmented by an increasing number of births, the ratio of deaths to the population will not fairly represent the rate of mortality, or entitle us positively to infer whether it has been diminished or not.

"The proportion of marriages, in an increasing population, is affected by the same cause. Owing to the greater proportion of children in such a population, the proportion of marriages seems less than it really is.

"There can, however, be no doubt that the rate of mortality in England has been materially diminished since the American war. The number of burials, estimated by averages of 5 years, did not differ considerably during the entire period from 1780 to 1815, though the population increased about 3,300,000 in the interval. Neither was the increase occasioned by any increase in the number of births, as compared with the bearing women, but by the increased number of children that have been reared, and passed through the different stages of life. 'About 100 years back,' says Mr. Griffith Davies, 'if any dependence can be placed on the registers, the number of annual births did not exceed the number of annual burials, so that the population could not then have been on the increase. The increase since that period must, therefore, be attributed to an increased fruitfulness of the female sex, to immigration, to a diminution in the rate of mortality, or to two or more of those causes combined. But it does not appear that the first of these causes has had any sensible operation, and the second can have had none, otherwise the number of burials must have increased in comparison with the number of births, which is contrary to the fact: the increase of population

\* A Statistical account of the British Empire: exhibiting its Extent, Physical Capacities, Population, Industry, and Civil and Religious Institutions. By J. R. McCulloch, Esq., assisted by numerous Contributors. 2 vols. C. Knight & Co.

must, therefore, be entirely attributable to a diminution in the rate of mortality.'—*Report of 1827 on Friendly Societies*, p. 38.

"There cannot, in fact, be a doubt that the value of life in England and Wales, regularly increased from 1740 or 1750 down to 1815; and there are good grounds for thinking that it then exceeded its value in any other country, with the exception of Scotland. Mr. Finlaison has calculated three Tables, which set this improvement in a very striking point of view. The first gives the expectation of life, as deduced from the ages of the subscribers to the Million Tontine of 1695; the second the expectation of life among the government annuitants, in the interval between 1785 and 1825; and the third, the expectation of life for the whole population, as deduced from the deaths and ages recorded in the parish registers from 1813 to 1830: distinguishing, in all cases, between male and female life. Those on whom the estimates in the first two tables are founded, being annuitants, and generally, therefore, in decidedly comfortable circumstances, must be regarded as picked lives; whereas the latter embrace all sorts. Now, it appears from these tables that the probable life of a male annuitant, 20 years of age, in 1695, was 29.34 years; while, in 1830, the probable life of a male of the same age, taken indiscriminately from the mass of the population, was 39.65 years; exceeding that of the former by more than *ten* years! The improvement in female life has been equally great; but, for obvious reasons, it is not so great when we compare females taken from the mass of the people with female annuitants.

"This wonderful improvement must, no doubt, be ascribed to a variety of causes: partly to the drainage of bogs and marshes, by which agues and marsh fevers have been entirely banished from many districts; partly to improvements in the diet, dress, lodgings, and other accommodations of the mass of the people; partly to the greater prevalence of cleanliness; and partly, and, since 1800, chiefly, perhaps, to the discoveries in medical science, and the extirpation of the small-pox."

Our readers will probably desire to know how many millions participate in this improvement of health. This is succinctly stated by our author:—

"It appears that the population of Great Britain increased, during the first thirty years of the present century, at the rate of about 15 per cent. each ten years, or of  $1\frac{1}{2}$  per cent. a year. A ratio of this sort is not easily changed, and there is no reason to think that it has been sensibly affected since 1830. On this hypothesis, the population must have increased during the interval at the rate of about 248,000 a year ( $1\frac{1}{2}$  per cent. on 16,539,318), and must, consequently, have amounted, on the 31st of May, 1836, to about 17,779,000.

"The population of Ireland increased, during the ten years preceding 1831, at nearly the same rate as the population of Great Britain. We believe that there, also, no great change can have taken place during the intervening period; and that the population may be fairly supposed to have increased since 1830 at the rate of about 165,000 a year (1.45 per cent. on 7,767,401); and if so, it would amount on the 31st of May, 1836, to about 8,592,000.

"Hence, if we be right in these suppositions, the entire population of Great Britain and Ireland would, on the 31st of May, 1836, be about 26,371,000. And including the islands of Jersey, Guernsey, Man, &c., it may be taken at 26,500,000.

"It results from these statements, that the British islands rank as the fourth state in Europe in point of population, being surpassed only by Russia, France, and Austria. Our population is nearly double that of the powerful and flourishing kingdom of Prussia."

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#### SPECTRAL ILLUSIONS.

A gentleman in the law, aged about 34 years, and accustomed to live rather freely—namely, to drink a bottle of wine daily—sometimes more—fell and struck his head against a wall. He was slightly stunned, for a few minutes, but resumed his avocations. He was advised, however, to take some aperient



medicine, and to leave off his wine. This he did. In a few days he began to be sleepless at night—this vigilance increased, and soon afterwards, while lying awake at night, he began to see figures moving about in his chamber. They increased in number, conversed, laughed, argued, and harangued upon all kinds of subjects, and were often highly entertaining. He generally took notes of the conversations, and some of them were very curious. One night there was a large company of choice spirits, and the subject was punning. They kept it up for some hours, and he wrote down several of the puns, some of which were by no means despicable. In a night or two after this, the scene changed, and instead of being amusing, the *Dramatis Personæ* became most disgusting and even horrible in their words and actions. The gentleman now took alarm, and applied to Dr. Johnson. He affirmed that these illusions were not dreams. He was wide awake all the time, and often noticed the conversations of the actors to his wife who slept in the same room. If he or his wife got up and opened the window-shutters, the illusions vanished.

On examination, this gentleman's head was found to be hot, the eyes red, the tongue furred, the pulse rather quick—in fact, he was feverish. It was also observed that his hands trembled, like those of a person labouring under delirium tremens. He was ordered to be cupped in the nape of the neck—to take saline aperients—mild diet—and to drink three glasses of sherry daily. It appeared to Dr. Johnson that this gentleman was affected by a kind of delirium tremens, caused by the sudden change from a bottle of wine daily, to water. It is also probable that some injury was sustained in the head by the blow. Opiates were not directed till the febrile symptoms subsided.

He soon recovered on the above plan, and has ceased to consult Dr. Johnson.

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The initiatory article in our present number will, we doubt not, find general acceptance with our readers. It is on a subject respecting which there is, confessedly, much ignorance and consequent empiricism often displayed. The reviewer has presented the outlines of the author's arrangement and specifications of his practice and criticism on preceding writers, with sufficient distinctness to serve as a useful guide to the inquiries and trials of those who are required to give advice and to undertake the treatment, in diseases of the ear.

Through inadvertence, we omitted to accredit the admirable article on BOUILLAUD's work on *Diseases of the Heart*, introduced into the last number of the *Eclectic*, to its proper origin and authorship—the *British and Foreign Medical Review*, that to which we are indebted for the copious notice, referred to above, of KRAMER on *the Nature and Treatment of the Diseases of the Ear*.

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## TWENTIETH ANNUAL REPORT

OF THE STATE OF THE ASYLUM FOR THE RELIEF OF PERSONS DEPRIVED OF THE  
USE OF THEIR REASON.

The excellent institution near Philadelphia, under the guidance and direction of the Society of Friends, for the reception and treatment of the insane, continues to flourish, as its object and merits fully entitle it to do. We have been favoured with copies of the last annual report from Drs. Charles Evans and Robert R. Porter; the former the attending, the latter the resident physician to the Asylum. Were not the room denied to us, we should yield to the tempta-

tion, and transfer its contents to the pages of the present number of the Journal. We do not however abandon our intention, and shall, therefore, content ourselves with introducing at this time the numerical results.

Patients in the Asylum 1st March, 1836,	-	46
Received since,	- - - - -	57
		—103
Discharged or died,	- - - - -	41
Remaining in the Asylum, 1st March, 1837,		62
		—103

Of the sixty-one patients discharged, there were:

Restored,	- - - - -	25
Much improved,	- - - - -	3
Improved,	- - - - -	5
*Stationary,	- - - - -	4
Died,	- - - - -	3
		—41

Of the sixty-two remaining in the house, there are:

Restored,	- - - - -	10
Much improved,	- - - - -	5
Improved,	- - - - -	11
Stationary,	- - - - -	36
		—62

The average number of patients during the year was about 58.

"Experience, we believe," say the Managers, "has proved that the permission granted by the contributors to admit as patients, persons who are neither members nor professors with friends, has been productive of advantage; the funds of the institution have been improved, and a more complete classification of the patients effected."

## NEW ORLEANS:

### ITS RELATIVE SALUBRITY AND THE SOURCES OF ITS DISEASES.

Our attention has been directed to the subject of the diseases of New Orleans, and the probabilities of its relative salubrity, by an article in the *Transylvania Journal*, No. IV., Vol. IX., from the pen of Doctor Caldwell, and a *Discourse on Temperance and of the applicability of stimulants in a warm climate*, by Doctor E. H. Barton of that city. The inference deducible from the observations and inquiries of these gentlemen is identical with that which every candid mind must reach in regard to the diseases and mortality of sickly cities and districts generally, viz., that the greater portion of suffering in these respects proceeds from the carelessness and bad habits of the people themselves, and not from any thing of a deleterious character inherent in the air and soil.

Dr. Caldwell, in his able essay, indicates the chief causes of diseases in New Orleans to be *malaria, intemperance in both eating and drinking, transitions of temperature, and want of cleanliness of the streets*. On the first cause we shall not descant in this place. Our scepticism of there being a separate and peculiar agency in the origination of febrile diseases, called malaria or miasm, has been

\* Three of these have been deranged upwards of ten years.

expressed with some fulness in another work some years ago.\* We have seen nothing since to renew or increase a belief in a poison which some consider as of vegetable, or vegeto-animal origin, whilst others again affirm that it needs neither vegetable nor animal remains, nor the union of both, whence to be originated, but that it emanates from certain soils, the which are not, however, yet defined or described. It would be difficult to point out any medical creed which involves in its announcement and in the commentaries on it so many contradictions, such beggings of the question, and oversight of an elementary knowledge of the operation on the animal economy of air, localities and *ingesta*.

Doctor Caldwell does not think it worth while to "run a tilt with the paradox or sophism, (call it which you please,) of the non existence of marsh miasma, backed by its retinue of shadowy retainers, and led on by the dreamies spirit of hypothesis." We had always thought that the spirit of hypotheses was closely allied to credulity; and that the more credulous the man the more was he under the influence of this (dreamiest) spirit. If required to instance any belief which has encouraged and sustained the wildest hypotheses and oddest speculations, we should unhesitatingly mention that in malaria. Contagion itself has hardly led medical writers and teachers a more fantastic dance, and been marked by more *diableries* than miasm has done.

In Dr. Caldwell's "hygienic details, applicable to the whole Mississippi region, but more especially to New Orleans, and other places in the vicinity of the river," we take, as we are sure his readers will, a livelier interest, because they are susceptible of direct proof and immediate and beneficial application. When the author says, "of all morbid agents, *intemperance* in some shape is perhaps the most frequent *exciting* cause of disease in tropical countries, and other places subject to high and long continued heat," he has the concurrence of nearly every intelligent writer on tropical hygiene. But when, after enumerating the evidences of the great, and, on any showing, the excessive use of intoxicating drinks in New Orleans, and pointing out the necessarily destructive effects from such use, he goes on to qualify his advice and animadversions by placing the drunkard and the glutton in contrast, and making the former appear on occasions as a venial offender compared with the latter, we cannot but deplore such a display of bad logic and of still worse morality. Grant, although we are ignorant of the fact, that many members of temperance societies are gluttons; and that, whilst they are bewailing the destruction of health and ruin, of estate and fame, brought on so many of their fellow-citizens by intemperance in drinking, they are destroying themselves by intemperance in eating. But then, does the practice of one vice justify that of another, or must a man be forbidden to point out moral impurity and physical ill unless he himself be perfectly righteous and a stranger to bodily infirmity? Doctors and professors should, at this rate, shut their mouths and throw away their pens; and both authors and reviewers, teachers and essayists of all classes, must wait with downcast eyes and folded arms for a new era—a millenium. In conformity with this kind of logic, the avaricious man, especially if he should be rich, would subject himself to severe rebuke and censure by exposing the misdeeds of a poor wretch who steals; and a soldier could not with any conscience either arrest or bring to punishment a murdering bandit.

\* Dr. Chapman's Medical and Physical Journal, vol. XI. p. 274-316.

Doctor Caldwell's love of justice and dislike to any kind of philanthropic professions unaccompanied by practice, have carried him away from the true point at issue, which is simply this: The use of intoxicating liquors is a frequent cause of disease, uncompensated for by any positive good, and which readily becomes a habit utterly destructive to man's usefulness, peace and comfort, and entailing serious loss and expenditure on the community in which he lives. The practice being admitted to be useless at the least, and destructive and ruinous in common, is it not the clear duty of every hygienic writer to do his utmost for its diminution and entire cessation? Fortunately, in this reform, he has it in his power to be entirely consistent, to square his practice with his profession and to avoid any the slightest accusation of hypocrisy—he has but to abstain from that, the use of which he reprobates in others. This is done, we believe by the members of temperance societies generally; it is all they profess to do in virtue of their membership; it is all they, as temperance men, ask others to do. There is in all this no deception, no illusion, no hypocrisy.

Doctor BARTON in his discourse states, as one of the objections against the use of ardent spirits, “that its indulgence is directly *injurious to health* in this climate,” (that of New Orleans.) “It was formerly very common for the planters in the country to give their negroes daily drams; it has now gone very much into disuse, from experience of its manifest injury.” Labour, the author adds, can be performed in that climate with greater ease and cheerfulness, and less exhaustion, by those who entirely abstain. They are enabled to endure hardship and exposure to the inclemencies of the weather and vicissitudes of season, better than those who indulge in it.

But again, says Dr. Barton, in estimating the mortality of New Orleans in 1835, “I am sure I shall still be under the mark, when I estimate the number of deaths caused by intemperance, directly and indirectly, in private practice in this city, to amount to 497, which added to the 940 from the Charity Hospital, makes the frightful mortality of 1437 in one year from this cause! making in the aggregate more than one-third ( $\frac{1437}{3333}$ ) of the whole number of deaths from intemperance!”

We learn from Dr. Caldwell, and he is confirmed in his assertion by Dr. Barton, that the intemperance so conspicuous in the hotels and places of public resort in New Orleans, “is not chargeable either to the *native* or the *acclimated and stationary inhabitants of New Orleans*, and other towns and places in the South. It is by the *floating population* that the excess is committed.” This last is the principal sufferer from disease. The only safe drinks for the hottest season of a hot climate, are, in Dr. Caldwell's opinion, cool water, sweetened or otherwise, according to the taste of the persons who use it, or well prepared lemonade, and other fluids equally bland.

Doctor Caldwell refers, in his recent essay, to opinions held and advanced nearly twenty years ago, respecting the exposure of New Orleans to diseases.

“As respects New Orleans, I make the same report *now*, after a recent visit of observation and inquiry, that I did after a like visit, in 1820. There is no uncontrollable and permanent cause, to prevent it from becoming as healthful, as any other large and populous city, the resort of adventurers of every description, from almost every climate and country on earth. And if it should be occasionally the seat of more than ordinary sickness, the event will be owing to the extraordinary assemblage of *ignorant and intemperate, unacclimated and reckless*

*inhabitants.* The native, acclimated, and orderly citizens, who do not wantonly make war on their constitutions, will enjoy as sound and uninterrupted health, as citizens of the same class in Baltimore or Philadelphia, New York or Boston. And a large proportion of them do so now, even under the protection of a very imperfect medical police. Nor will it surprise me, should New Orleans become hereafter, healthier than either of the northern commercial capitals."

The means of insuring health to the city are summed up as follows :

"The terms *CLEANLINESS, PURITY and TEMPERANCE*, include, in their signification, all that is requisite, to render New Orleans one of the healthiest cities in the world. Except during from three to four months in the year, it is one of the healthiest already. Summer and autumnal complaints aside, it has much less disease, than any other city of the same extent and population in the Union. Remove the cause then of summer and autumnal complaints, and it will be the Montpellier of our country—and far healthier than the celebrated spot in France, after which I have named it. Of the temperance indispensable to the health of New Orleans, I have spoken already. A few remarks on its cleanliness and purity, will constitute the remainder of what I have to offer on its Medical Police.

Notwithstanding what has been said to the contrary, the situation of New Orleans is peculiarly favourable to its *cleansing and purification*. These two processes are to be effected by *streams of air*, and *streams of water*—the cleansers and purifiers which nature employs. And what they cannot sweeten, when aided by rakes, brooms, brushes, and occasionally by soap, must be committed to the flames, and be purified by fire."

We cull some additional passages on this subject :

"The citizens in their inquiries about the source, (of malaria,) have looked too far from their *immediate homes*. Their eyes have been fixed too exclusively on the swamp and the grave-yards west of the city." "It is not humidity, nor any thing else *beneath* the surface of the ground, but filth *on the surface* of it, that creates sickness in the city."

Respecting the origin of yellow fever we read :—

"There is indeed no reason to believe that swamps ever produce *real yellow fever*. Their legitimate offspring is *intermittents* and *remittents*, which, though of the same genus or family, are of a different species. And these, with dysentery, and chronic affections of the spleen and liver, are the forms of complaint that prevail along the New Orleans swamp. *Yellow fever is essentially a disease of the city*; by whose impurities in the streets, alleys, courts, cellars, gutters, sewers, and elsewhere, it is generated; and by the removal of which alone it can ever be prevented. Drain the swamp, or fill it up and cultivate it with grass and other vegetables, or convert it into a pleasure-ground, that will fascinate by its beauties, and regale the ear with melody, and the smell with fragrance—do *with* it and *to* it what you please, and the city will still be the theatre of malignant fever, unless its medical police be improved. On the contrary, perfect the police, in the manner just directed, the swamp remaining as it is; and the city will become a place of health. Yellow fever will disappear, with the filth that has produced it. I repeat then, that *cleanliness and temperance, prudence on the score of exposure, and suitable clothing*, include all that is most requisite to complete the Medical Police of New Orleans—and of all other cities."

We have given these remarks and monitions of Dr. Caldwell the more willingly, because they are applicable, in a greater or less extent, to every city in the union, and indeed to every crowded community.

#### EXCLUSIVENESS.

Doctor John E. Cooke, in a paper read before the College of Physicians and Surgeons of Lexington, on the *good effects of Blistering Plasters in Local Inflammation*.

tion,\* states several cases in which the use of this remedy was attended with the best effects. Dr. C. gives the still stronger testimony in its favour, in saying that it has been so effectual in relieving or rather removing inflammation, that he has never resorted to cupping. This to our minds borders on exclusiveness. In various inflammations of a sub-acute character, in which the lancet has been used without the desired relief having been obtained, cupping or leeching will accomplish this end, or, failing to do so, is still an excellent precursor to a blister.

When Dr. Cooke says that some prefer the application of tartar emetic plaster to the use of the plaster of cantharides, and adds, that theoretic views have something to do in the decision of the question, he must be aware that the preference is given to the latter application only in chronic affections, in which a permanent rather than a speedy impression is desired. Another tissue deeper than the cutaneous system is interested by irritation from tartar emetic applied to the skin. The cellular is inflamed, and a discharge of sero-purulent matter follows, in place of the serous which is caused by vesication. The sympathies are more extensive and abiding between the ulcerated surface from tartar emetic and the affected viscus or viscera, than between an inflamed skin from a blister and the latter. The effects from tartar emetic ulcers, are analogous to those produced by issues or setons.

Doctor Cooke, in his remarks, only has regard to the procuring of a free discharge by a blister; and whilst he deprecates irritation as an effect of the remedy, does not state that there are occasions when we look for this alone, without at all desiring that a secreting surface should be established.

The accounts of the cases introduced by the author are instructive, and we could wish that our limits had allowed of their insertion in this place.

#### BLEEDING IN THE CHILL OF INTERMITTENTS.

Under this head, in the *Western Journal of the Medical and Physical Sciences* for January, we find the details of four cases by Dr. A. G. Henry, illustrating the efficacy of the use of the lancet in the cold stage of intermittent fever. To the same purport is a paper by Doctor Josiah Higgason, of Tennessee, in the *Transylvania Journal*. Dr. H. gives thirteen cases in which venesection was used with obviously beneficial effects, and a speedy removal of the disease. In one of them he bled in the last stage to the extent of twenty ounces. The paroxysm returned the following day, and in the cold stage he took away twelve ounces of blood. Ten grains of quinine, in five doses administered during the interval following, and a dose of calomel and rhubarb, sufficed to prevent a return of the chill. The treatment subsequently, "with a view to avoid relapse," included, we may presume, the farther administration of quinine.

Our notice of Doctor Mackintosh's work on the Practice of Medicine in the fifth number of this Journal, has apprized our readers, who were not antecedently in possession of the views of that gentleman, of the value which he attaches to venesection as a remedial means in the cold stage of intermittents.

\* See *Transylvania Journal*, No. IV., Vol. IX.

**MEDICAL COLLEGE OF PHILADELPHIA.**

Of the chief features of this College we have already spoken in a former number. The subject is again introduced for the purpose of expressing our regret at the failure of the application of its friends for a charter from the legislature. The memorial in favour of this measure was signed by five-sixths of the active members of the profession in the city, out of the two incorporated schools, the University and the Jefferson Medical College. The bill for chartering the new College passed the House of Representatives without a division, after having been amended so as to preclude the formation of a special Faculty. Introduced into the Senate, it would also have been carried through that body, but for a rider, which a member proposed, and which naturally enough, at the advanced period of the session, lost the whole bill. The amendment, in the shape of a rider, to be tacked on the original clauses, was, that the Gettysburg College in Adams county should have power to establish a Special Faculty of Medicine in Philadelphia; the proposed members of which, we believe, were, oddly enough, signers to the memorial in favour of the Medical College of Philadelphia. The prayer of this memorial was, that physicians, members of the College, should be empowered to prescribe a scheme of medical instruction, and to carry it into effect by such means and in such a period as they, the best judges in the matter, should devise. Teaching was no longer to be confined to a privileged few, nor were the students of medicine to be restricted in their attendance on any particular school or class of lecturers; but were left free to glean knowledge from all quarters and all persons. Provided they studied the requisite number of branches for a sufficiently long period, they could become candidates for a degree before a board of Examiners appointed by the College, but who were not themselves to be lecturers. Thus, for example, a student might spend his three years; first in gleaning information from his preceptor and by visits to the almshouse in the country; and afterwards attending the hospital and lectures in any school or in any series of lectures for a while in Baltimore, New York, &c. and subsequently in Philadelphia. The prescribed conditions having been complied with elsewhere, it would not be even necessary for him to attend any lectures in the latter city. He might, at once, present himself as a candidate for a degree before the Board of Examiners here.

It is not surprising that a plan of instruction and for conferring degrees, so liberal, comprehensive and properly democratic, should find favour with our legislature and secure its assent to carrying it into effect. The only impediment, serious in its operation, though ridiculous in its character, was the proposition, already mentioned, of the senator from Adams county. It was, we understand neither suggested nor approved of by the medical gentlemen here, whose names were to be included in the special faculty. With their policy and views, apart from this attempt of their injudicious friend at connecting under a common head principles and measures diametrically contrasted with each other, we have nothing to say at this time. Our oft-repeated creed of late years, although we have never endeavored to carry it into effect for our own behoof, is, that any respectable association of medical men is entitled to be heard in its application for a charter; and as far as our pen and speech may have weight we should not feel inclined to oppose it. The unity once broken, we do not see who has a right to prescribe limits to the number of institutions for medical instruction in this city.

# THE ECLECTIC JOURNAL OF MEDICINE.

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## BOUILLAUD ON DISEASES OF THE HEART.

(CONCLUDED.)

We are not deterred from inserting, and we do not believe that our readers will be deterred from carefully perusing, on account of its length, the abstract rather than a review of the admirable work of *Bouillaud on Diseases of the Heart*. The subject has not fixed the attention of medical men on this side of the Atlantic to an extent at all commensurate with its importance. There is indeed, we fear, no little ignorance respecting it. Under this impression, and with the hope of contributing to remove the stigma, we give currency, through the pages of our Journal, to the best accessible substitute for the entire work itself. Our ability to perform this duty is derived from the pages of the *British and Foreign Medical Review*, from which both the entire article in our sixth number and the present one are transferred, though in a somewhat different order to that in which they were originally published by our English contemporary.

In another point of view, the introduction of this subject at the present time is peculiarly opportune. A study of it will form an appropriate prelude to that of the Treatise, by the same author, on the Nature and Treatment of Acute Rheumatism,—the translation of which, by our townsman, Dr. Kitchen, will be found in the present number of the Library.

*Endocarditis*.—In the chapter devoted to endocarditis, or inflammation of the membrane lining the cavities of the heart, which M. Bouillaud looks upon as the most original and important portion of his work, he sets out by assuring us that the opinions here put forth in relation to this affection are the result not of any preconceived theories, but of a fair generalization of facts. Its very existence seems to have been unknown to Corvisart and most other writers on the subject



of diseases of the heart. Baillie, however, speaks of thickening of the valves, accompanied by the loss of transparency and the assumption of an opaque white colour; of the lining of the ventricles being frequently a good deal thickened, and appearing like a firm white membrane; and adds, "I have also seen the valvular apparatus between the auricle and ventricle in a state of inflammation, and covered with a layer of coagulable lymph; but, this I believe to be very uncommon." Burns, too, had found the internal surface of the right auricle covered with a layer of flocculent lymph; and that of the left, in another case, partly ossified, and lined by a false membrane. Kreysig attributed the frequent formation of polypus concretions within the heart to the existence of inflammation within this organ; an opinion which was subsequently impugned by Laennec, who asserts that inflammation of the internal membrane of the heart and great vessels is infinitely rare. As for the redness occasionally found in them, he looked upon it in a vast majority of cases as a mere cadaveric phenomenon; and especially so where the agony preceding the fatal termination has been greatly prolonged, and accompanied by a state approaching to suffocation, or where there is an evident alteration in the constitution of the blood, or signs of incipient decomposition in other parts of the body. At the very most, he would admit the probability of such inflammation in those cases only where the redness is accompanied by swelling, thickening, or infiltration; whilst he considers the existence of ulceration, or of layers of coagulable lymph, as the only unequivocal proof of its reality. Liquid pus can, for obvious reasons, rarely be expected to be met with in such a situation. Little has been added to our knowledge on this point by Dr. Hope's work; the opinions advocated in it coinciding very nearly with those of Laennec just detailed.\* The extensive investigations made by M. Bouillaud during the last three years enable him to state with confidence, even in opposition to the high authority just cited, that inflammation of the lining membrane of the heart is a very common affection, and at least as frequent as pericarditis itself. Its early stage, he admits, is not attended with such incontestable anatomical evidences as is that of the last-mentioned diseases; but those of the more advanced periods are altogether analogous, and quite as satisfactory. When redness of the membrane in question is detected, he does not by any means conclude from that circumstance alone that there must have been inflammatory action, but is much guided in the formation of his opinion by the symptoms which characterized the disease during life. Of the possibility of such an affection we have positive and altogether indubitable proof in those cases where inflammation of the veins from external injury has gradually extended to the lining membrane of the heart, as well as an instructive and unimpeachable example of the appearances properly characteristic of such inflammation.

In case 43 we have an instance of this disease existing in conjunction with pericarditis and hypertrophy of the heart, with thickening of the valves of the left side. The patient was a young man of twenty years of age. The leading symptoms were dulness on percussion and prominence in the præcordial region, together with a vibratory sensation imparted to the hand applied over it. A sound of friction diffused over the cardiac region, and synchronous with the motions of the heart, was also heard; whilst there existed, moreover, a distinct bellows murmur during the ventricular contraction, and this manifested its greatest intensity over the left auriculo-ventricular origin. The pulse was eighty, small, and intermittent; and the face and extremities were œdematous. The patient was easily put out of breath, and complained of a slight ill-defined pain in the chest. The diagnosis formed from this group of symptoms by M. Bouillaud was "acute endocarditis, grafted on an old lesion of the valves of the left side, and general hypertrophy of the heart;" and the appearance after death (which occurred on the fifth day from the supposed commencement of the

\* It will be seen in the notice by us of another work by M. Bouillaud, ("Sur le Rhumatisme,") that the frequency of this affection of the lining membrane of the heart had been recognized and publicly noticed by Dr. Watson, of London, previously to the publication of M. Bouillaud's observations on the subject.—*Ens.*

inflammation of the inner membrane,) fully justified his prediction. About four or five days before the fatal termination, considerable cerebral oppression supervened, with temporary loss of consciousness, convulsions, and tremendous palpitations, the heart striking like a hammer against the side of the chest. On dissection, in addition to hypertrophy and the false membranes of recent pericarditis, the tricuspid valve was found slightly thickened, and a colourless coagulum (which he supposes to have been formed previous to death, namely, at that period when the cerebral symptoms supervened,) occupied both ventricles. The mitral valve was very much thickened, reddish, and of a fungoid appearance, and presented inequalities on its surface, which were obviously of an old date. The columnæ carneæ were greatly thickened, and one division of the valve adhered to the wall of the ventricle. The internal surface of the left auricle was lined with a false membrane, which adhered to it pretty firmly. Two or three spoonful of a reddish fluid were found at the base of the brain, and the arachnoid was much injected, and obviously thickened over the left anterior lobe; and the substance of the brain, on section, presented numerous, thickly strewed, bloody spots. The case just detailed being unfortunately a complicated one, as are indeed all those in this section, is far from affording us satisfactory information as to the peculiar symptoms which are to be considered characteristic of endocarditis. In the 50th Case, in addition to the redness of the internal membrane of the heart, there existed numerous small ulcerations over the commencement of the aorta and its valves: the symptoms are but very inadequately recorded, and the case was as far from being a simple one as the last, inasmuch as an extensive pleuropneumonia coexisted.

His second division of cases of endocarditis embraces those in a more advanced period, and comprises eleven cases, of which the first four present us with examples of adhesion of the valves to the internal surface of the heart; a species of lesion which, though so important in its effects, (hypertrophy, dilatation, &c.) has hitherto been almost entirely overlooked. The next three are instances of organized false membranes of various extent on the inner surface of the organ, which resemble in appearance the white patches so often found in the pericardium, and are, like them, of an inflammatory origin. The last four cases are examples of granulations or vegetations on the valves; a species of lesion which becomes of importance as soon as it exists to such a degree as to impede their action or materially to obstruct the orifices.

The third division of cases of endocarditis comprises those in the most advanced stage, the first subsection consisting of those where there exists induration and thickening of the valves, without any notable contraction of the orifices. Where this morbid alteration in the valves is carried to a great extent, it unfits them for the adequate fulfilment of their office, and thus, by permitting regurgitation, paves the way for hypertrophy, dilatation, and other diseased conditions of the organ. In the second subsection are contained cases in which a similar state of the valves exists, but accompanied by considerable narrowing of the orifices. In one of these cases the hydriodate of potass was administered in half-grain doses daily, with a view to combating the symptoms of hypertrophy of the heart which were present; but, as it seemed only to raise the pulse and to exasperate the patient's condition, it was soon abandoned.

Of forty-seven cases of fibro-cartilaginous and osseous induration of the valves, one was in an infant of only ten months old; two were in children of seven and ten years of age; twelve in individuals of various ages, from sixteen to thirty years; fifteen were between thirty and fifty; eleven between fifty and seventy-two; and in three the ages not mentioned. Thus, out of forty-four cases where the age was ascertained, no less than thirty-three were under fifty years of age; a fact which is certainly rather favourable than otherwise to the theory which insists on the very frequent inflammatory origin of these lesions.

In his general remarks on endocarditis in its first or inflammatory period, which is characterized by sanguineous congestion, softening, ulceration, and suppuration, he states that redness of the membrane lining the cavities of the heart was met with in twelve out of thirteen cases; and he attributes its absence in the thirteenth to the short time the disease had existed, its disappearance under

these circumstances being quite analogous to what takes place in regard to slight erysipelatous redness immediately after death. The colour, when present, varies from a slight rose tint to a scarlet, violet, or even a brownish hue, is partial or general, and is frequently confined to the valves alone; and, even if universal, is most intense on them. He believes it to depend rather on a tinging of the membrane than on true capillary injection; it does not usually penetrate beneath the membrane. It cannot readily be washed away, but yields to prolonged maceration; and M. Bouillaud has taken occasion to express his dissent from the opinion of M. Cassimir Broussais, who thinks that we may distinguish the tinging of the lining membrane of the sanguiferous vessels which takes place after death from true inflammatory redness, by the effects of maceration. The frequency of cadaveric imbibition, as it is called by Laennec, is fully recognized by our author, especially after typhoid and putrid diseases, as well as when the examination of the body has been postponed till decomposition has commenced. Yet, on the other hand, notwithstanding the high authorities which may be cited against him, he is satisfied of the inflammatory nature of that redness which is discovered, prior to the appearance of any trace of decomposition, in an individual who during life has presented the train of symptoms which he believes to be characteristic of endocarditis; and the fact becomes altogether incontrovertible when the redness coincides with swelling, thickening, and infiltration of the parts which it occupies, or when purulent matter, or a pseudo-membranous effusion, or even colourless and adhering coagula, resembling in nature the buffy coat of the blood, are detected; and especially when this tinting coincides with a similar redness in the blood-vessels, they having been ascertained to be in a state of inflammation by the symptoms during life. A redness similar to that in question was produced, be it remembered, in this same membrane, in those experiments on animals where inflammation of the pericardium had been artificially induced by mechanical or chemical stimulants. The thickening of the membrane is rarely very obvious, save on the valves. Its inflammation imparts to the blood contained within the cavities of the heart a tendency to coagulate; a phenomenon which is also exhibited in the blood contained within an inflamed artery or vein. The fibrinous concretions consecutive to an endocarditis are white, colourless, elastic, and glutinous, adhering to the walls of the heart, and twisted round the tendons of the valves and fleshy pillars. They are, according to our author, in a state of imperfect or incipient organization; and he conceives it possible that small adhering fragments may even become perfectly organized, and so give rise to vegetations or granulations on the valves. The coagula resulting from mere obstruction to the circulation, on the other hand, are soft, reddish, or of a darkish hue, and bear a close resemblance, both as to consistence and colour, to currant jelly.

As to the morbid appearances in the second period of the disease, he remarks that the vegetations or granulations display a peculiar preference for the valves, and especially for their free edges; and adopts M. Laennec's division of them into the globular and the warty. The former, which are soft, easily detached, and of a whitish, yellowish, or reddish hue, would have been better designated by the name of albuminous or fibrinous vegetations. He believes they sometimes originate in the organization of effused and adherent coagulable lymph; being thus analogous to the granulations met with on the surface of the pericardium, pleuræ, or peritoneum, when in a state of chronic inflammation. The warty excrescences, on the other hand, are of a horny or cartilaginous consistence, and very firmly attached. These vegetations vary in size from that of a grain of millet to that of a small pea, and may exist either separately or congested into groups, so as to assume a cauliflower appearance. They rarely exist as an insulated lesion, being very commonly accompanied by fibro-cartilaginous or calcareous induration of the valves, and, when very large and confluent, necessarily themselves give rise to considerable contraction of the orifices and impediment to the valvular actions.

Of the cartilaginous and osseous degenerations which characterise the third period of the disease, the most frequent seats are the fibrous zones surrounding the orifices of the heart, together with the adjacent valves. The ossifications

occasionally assume a very irregular shape, and sometimes penetrate deep into the muscular substance of the heart itself. The diseased valves are in some instances perforated with holes, torn, and reticulated; and, in one of the cases here detailed, one of the aortic valves was found almost entirely detached and floating in the cavity of the vessel; a species of lesion which is by no means unprecedented. The contraction of the crifices is perhaps the most serious of all the morbid alterations consequent upon endocarditis. In its extreme degree, the point of the little finger, or even a quill, can scarcely pass. When the thickened and indurated valves become consolidated with each other, a permanent opening is formed, of a roundish, oval, or slit-like outline; which in the case of the auriculo-ventricular valve, from its projection into the body of the ventricle, is compared to the glottis, or when much thickened, to the os tincæ. This narrowing of the passages of the heart by chronic inflammation is very analogous to what takes place in other organs of the body under the influence of the same cause,—as in the urethra, and lachrymal and biliary ducts, the œsophagus, the cardia, the pylorus, the rectum, &c.; and the hypertrophy of the heart which succeeds may be compared to the thickening of the muscular coats of the bladder, stomach, and other hollow organs, which arises in such circumstances, from the difficulty of expelling their contents in consequence of the obstruction. The inflammatory origin of the cartilaginous and osseous depositions within the heart, in a great number of cases, is now fully recognized by Andral and many of the best pathologists of the day. All the morbid alterations under consideration are much more common in the left side of the heart than in the right, though they are by no means confined to the former, as Bichat insinuates.

Inflammation of the endocardium is rarely indicated by any peculiar pain; and, when this symptom does exist, it is generally referrible to the coincidence of pericarditis or pleurisy, rather than to the affection in question. There is, however, often a considerable sense of uneasiness, anxiety, and oppression referred to the præcordial region; and this, in extreme cases is accompanied by a tendency to syncope, the pulse generally becoming very rapid; and it is then for the most part irregular and intermittent. Palpitations are commonly present. The impulse of the heart against the side of the chest is usually very strong, and is felt over a greater extent than natural; which M. Bouillaud ascribes to the turgescence of the organ, under the stimulus of the internal inflammation. The extent of præcordial dulness on percussion is found to be somewhat increased: the dulness arising from this cause may, however, be distinguished from that depending on a simple effusion into the pericardium, by observing that, in the case of endocarditis, the beat appears superficial, being visible and perceptible to the hand; whilst, if there be considerable effusion, on the other hand, it is deep-seated, and scarcely at all to be recognized by the sight or touch, at least when the patient is in the supine posture.

The *bruit de soufflet*, or bellows sound, which accompanies endocarditis, and masks one or both of the normal sounds, will vary in intensity, he conceives, according to the degree of swelling of the valves, and the abundance of the fibrinous or pseudo-membranous matter formed within the cavities of the heart. The pulse is often not in harmony with the heart's action,—the former being small and feeble when the latter is violent and tumultuous; a discordance which he ascribes to the presence of a considerable mass of fibrinous concretion in the heart, and to swelling of the valves and consequent obstruction of the orifices; and it is in such instances that we meet with extreme paleness of countenance, anxiety, and jactitation, swimming in the head, syncope, &c.; and, in the advanced stage of such cases, the venous circulation becomes impeded by the same circumstances, as is evinced by the bluish or livid colour of the face and extremities, together with an œdematous state of the same parts: and he is even inclined to think that the cerebral symptoms occasionally met with, the sudden loss of consciousness, the slight convulsive motions, the stertorous respiration, and foaming at the mouth, are the result of the congestion of the veins of the brain thus induced. When the obstacle to the circulation is consid-

erable, but only then, great dyspnoea is present, attended with extreme restlessness and uneasiness in every position.

The above description of the symptoms is applicable to those cases only where the disease exists in a very acute and extensive form. When it is only partial, subacute, or chronic, its signs are much less marked, and to recognize it is, as he confesses, a matter of considerable difficulty, and requires great attention to the examination of the patient. The decidedly acute form can hardly be confounded with any other affection, except it be pericarditis; but our author admits that there are occasionally cases where he remains in doubt between these two diseases. Practically speaking, however, the difficulty is of little importance. When the pericarditis is accompanied with a copious effusion of fluid, the mistake, he thinks could hardly be committed, if we attend to the diagnostic symptoms mentioned above. Where, however, such effusion is not present, the difficulty becomes seriously increased. Our own impression is, that, in the present state of our knowledge, the distinction will often be impossible. The friction between the opposing layers of the pericardium, when roughened by the presence of adherent coagulable lymph, produces a morbid sound much resembling that heard when the valves are inflamed and thickened. If, however, this sound cease on change of posture, as is sometimes the case, our author is then inclined to refer it to the pericardium. The existence of "frémissement cataire," with intermittence or irregularity of the heart, are also signs of great value in diagnosing a narrowing of the orifices. The triple or quadruple motion of the heart, already alluded to as one of the most remarkable interruptions of the natural rhythm of the organ, is dependent on this narrowing, or on induration of the valves; and the dulness of sound on percussion, which arises in the advanced period, depends on the dilatation and hypertrophy to which the lesions just mentioned eventually give rise. It is to auscultation chiefly that we must look for aid in our attempts to form the above diagnosis. The bellows murmur, the saw and rasp sound, are here signs of the first importance: out of above one hundred cases, some modification of these sounds was detected in all save one, and that one was not adequately examined. Induration of the valves is rarely accompanied with pain. In some instances a slight uneasiness or weight is felt at the præcordia or epigastrium; in nearly all, palpitations and a tendency to syncope are complained of. During the palpitations the pulse is of extreme frequency,—from 140 to 160 in a minute.

When, therefore, an individual presents to our observation a permanent "bruit de soufflet" in the præcordial region, a rasp-like or a sawing sound, whilst a vibratory sensation is imparted to the hand, and tumultuous action of the heart or palpitations and irregular pulse exist, it is in the highest degree probable, if the disease dates back some months or years, that we have to do with induration of the valves and narrowing of one or more of the orifices of the heart; and this becomes certain when to these local signs the general symptoms of impeded circulation are added; as, for instance, dilatation of the superficial veins; pulsation of the jugulars, synchronous with the pulse, from reflux from the right ventricle, in consequence of inadequacy of the tricuspid valve; violet tint of the complexion; congestions of the lungs, liver, mucous membrane, brain, &c.; passive hemorrhages or serous effusions; dyspnoea on slight exertions; cerebral derangements, loss of sleep, frightful dreams, &c.

M. Bouillaud next investigates the question as to whether it be possible to decide in which of the orifices of the heart the narrowing is seated; a point, the determination of which being, as he justly remarks, more curious than useful, we shall not at present dwell upon.

The symptoms arising from the adhesion of the valves to the parietes of the heart are much the same as those from contracted orifices; the reflux producing very similar local symptoms, and an embarrassment of the circulation to a nearly equal amount. A hardened and distorted condition of the valves is perhaps usually in such a preliminary stage, which gives rise to reflux of the blood; and this, in its turn, by throwing the valves back, facilitates their adhesion. He endeavours, indeed, to discriminate between the symptoms of these two morbid conditions, though, we think, not very successfully. Thus he believes that, in

the case of adhesions, the *bruit de soufflet* is of a fuller character and less rattling or rasp-like; that the beat of the heart is less irregular, and the *frémissement catinaire* less marked; that the pulse is not so small; and, lastly, that the dyspnoea, the venous and serous congestions, exist in a less degree.

The vegetations on the valves, when they do not interfere with their action or notably diminish the orifices, are attended by no very obvious symptoms; yet M. Bouillaud is inclined to suspect their existence when there remains a well-marked *bruit de soufflet*, unaccompanied by any other symptom.

Endocarditis is induced by the same kind of causes as pericarditis. It may occur either as a primitive or as a consecutive disease. The affections on which it is most apt to supervene are pericarditis, pleurisy, phlebitis, and acute rheumatism. In the acute stage, it may terminate fatally in a very few days; and one of the principal causes of death here is supposed to be the extensive formation of sanguineous concretions within the heart. If actively and properly treated, it will generally end favourably within about a week; but, if it pass into the chronic state, its duration is indefinite: yet even here the lesions thus produced become sometimes apparently stationary, and, under judicious management, life may be prolonged to a very advanced period.

On its treatment we shall not dwell, as it is essentially the same as that of pericarditis; or, if there be any difference, it is only that copious and repeated depletions are still more imperatively called for here, in order to prevent the coagulation of the blood, the deposition of false membranes within the heart, and permanent derangement of its mechanism. If it passes into the chronic stage, moderate local and general blood-letting, counter-irritation, diuretics and purgatives, digitalis, baths, absolute repose, and a very low scale of diet, are our chief resources. With regard to digitalis, we may remark that our author seems to have a peculiar preference for the endermic method of exhibiting it, denuding the skin by a blister, and then sprinkling from eight to twenty grains of the powder daily over the exposed surface. The syrup of asparagus is also amongst his favourite remedies.

*Carditis.*—Carditis, or inflammation of the muscular and cellular tissues of the heart, is the subject of the next section. The existence of any well-authenticated and well-described instance of a general inflammation of the heart was doubted by Laennec. Partial inflammation, characterized by abscess or ulceration, is, he admits, of occasional occurrence. Ramollissement of the heart is placed by M. Bouillaud, as well as previously by Corvisart, amongst the occasional consequences of inflammation; though he is far from asserting, as Laennec insinuated he did, that ramollissement of this organ can have no other source. The induration of the muscular tissue of the heart has always been reckoned amongst the possible consequences of its inflammation. No authentic instance of gangrene of the heart is yet upon record. Carditis so rarely exists in an uncomplicated form, that Corvisart never met with an example of it. He has given in addition to three cases of his own, six from Meckel, Storck, and Hildanus; and in all the latter pericarditis coexisted. M. Bouillaud has collected together several additional cases of a similar kind: amongst these is one by Dr. Latham, of a patient who died in two days of an acute inflammation of the heart. On dissection, the heart was found of a reddish brown colour and much softened. On making an incision into the walls of the ventricles, there oozed out here and there between the muscular fibres innumerable drops of pus; a case which sufficiently proves both the extent to which inflammation may affect the heart, and that ramollissement is really one of its terminations. Mr. Stanley's case of true carditis was an equally decisive one, and must be in the recollection of most of our readers.

M. Bouillaud arranges his cases of carditis under the three following heads: 1st, those terminating in ramollissement or suppuration; 2d, those terminating in ulceration, perforation, and rupture of the walls of the heart, of the columnæ carnea, tendons, or valves; 3d, those ending in ulceration, with the consequent formation of aneurism; 4th, those leading to induration in various degrees up to a fibro-cartilaginous or cartilaginous consistence, or even to perfect ossification; as in Burns' remarkable case.

A general carditis has never yet perhaps been met with in its simple state, but always complicated with inflammation either of the inner or outer membrane of the heart, or both. According to our author, ramollissement and suppuration of the heart are similar lesions, differing from each other only in degree. The colour of the softened structure is either reddish or yellowish white; the first indicating an earlier, the second a more advanced period of the affection, or that where purulent infiltration has taken place, analogous to the two successive conditions of the lung in pneumonia, or of the psoas muscle in psoriasis. The purulent matter may be either encysted or infiltrated, and may make its escape either towards the external or the internal surface of the heart, though he is not aware of any recorded instance of the latter.

Ulceration of the heart, together with the aneurismal tumours and perforations which are consecutive to them, are much more frequent in the left than the right side of the organ. According to M. Breschet, the apex of the left ventricle is the most usual seat of these aneurismal cysts; but M. Reynaud has thrown some doubt on this generalization, as he, on the other hand, has found that, in seven out of thirteen cases analyzed by him, the disease did not occupy the apex. Perforation of the heart is much less apt to occur from rupture of these aneurismal tumours than by simple ulceration; the firm adhesion and thickening of the two layers of the pericardium forming, for the most part, a bulwark in the former case. When perforation does at length take place, it is generally rather by rupture than the absolute penetration of the ulcer. If the external wall of the heart be thus perforated, instant death, by bleeding into the pericardium, is the result: whereas, if the opening affects the septum, the mixture of the black and red blood is the only immediate consequence.

Corvisart was unable to fix on any diagnostic symptom by which to distinguish carditis from pericarditis; and neither Laennec nor our author has been more successful, which, inasmuch as the former is scarcely ever met with uncomplicated is not surprising. The symptoms of aneurismal tumours of the heart, of which about eighteen cases are on record, are equally obscure, and the affection has not yet in any one instance been detected.\* Yet, M. Bouillaud considers that, with the joint aid of percussion, auscultation, and the touch, carefully and skilfully exercised, it is not altogether to be despaired of. Thus, it is evident that such lesions must produce a degree of dulness on percussion in proportion to their magnitude; that they may in some extreme cases, eventually raise the corresponding portion of the thoracic parietes; and it is probable that an anormal sound may be produced by the entrance and expulsion of the blood through the opening of communication with the heart.

*Hydropericardium.*—This disease is judiciously divided into active and passive; a distinction neglected by Corvisart. The latter being the mere result of an obstacle to absorption and to free venous circulation, in consequence of the primary disease of the heart, is not dwelt on. The former was considered by Laennec, as it is also by our author, as being extremely rare; and if we leave out of view those cases where the serous effusion accompanies or follows a purulent or pseudo-membranous one, and where other evidences of pericarditis co-exist, they have been unable to adduce any indubitable instances of it. The quantity of fluid which should be considered sufficient to constitute a dropsy of the pericardium seems quite unsettled: Corvisart fixes on six or seven ounces as the minimum. Laennec has laid down nothing very definite on the subject. Bouillaud thinks that Corvisart has placed the mark too high, as he conceives

\* In the case of the celebrated Talma, though he was attended by several of the most eminent medical men in Paris, the existence of this disease was never once suspected till revealed by the dissection. An aneurismal tumour, capable of containing a small hen-egg, was found at the apex of the heart: it communicated by an aperture, or cartilaginous ring, of about an inch in diameter, with the left ventricle; on the outside of this cyst the two pericardial layers were adherent, and formed the chief portion of its parietes. It was filled with fibrinous coagula, arranged in a succession of thin concentric layers. The immediate cause of his death was a neglected stricture of the rectum.

that the quantity of water which can be accumulated with this membrane, as the mere effect of a prolonged agony previous to death, rarely exceeds one or two ounces. When, however, hydropericardium is well marked, the quantity is often so considerable as to leave no difficulty, as it amounts occasionally to two or three pounds; and, in one case of Corvisart's, it amounted to no less than eight pounds. In opposition to Laennec, our author asserts that the heart has occasionally, in such cases, a whitish macerated appearance, from the long-continued contact of the fluid. He differs also from the same distinguished writer in respect to the difficulty of recognizing its existence during life, and believes that it may be detected by its physical signs in nearly every case where the effusion is somewhat considerable. The sounds of the heart in such instances become distant and obscure, and its beat, if felt at all, is (as Corvisart has remarked,) very variable as to the place where it is perceptible; being sometimes on the right and sometimes on the left side of the chest, and occasionally disappearing altogether when the patient is lying in a supine posture. As for the fluctuation seen by Senac, and felt by Corvisart, M. Bouillaud's own experience rather inclines him to doubt the propriety of placing it amongst the symptoms of this disease. In the only instance where he felt anything like fluctuation, he had reason to think it depended on the application of the heart itself, in its contraction, to the parietes of the chest over an unusually large surface, in consequence of its displacement by a tumour within the left side of the thorax. The prominence of the præcordial region is insisted on, and with reason, by Corvisart, who first noticed it. Its treatment, when it is discovered, will be the same as that of other active dropsies,—bleeding, diuretics, purgatives, &c. With regard to the propriety of paracentesis thoracis in any case of this disease, the data hitherto known to M. B. are insufficient to enable him to decide; and, as to the still bolder proposition of Richerand, to inject the pericardium with a stimulant fluid, in order to produce, as in the parallel practice in hydrocele, an artificial inflammation of the serous membrane, adhesion, and a permanent cure, he is still less in a condition to be justified in countenancing it.

*Hypertrophy of the Heart.*—This affection which was considered by Corvisart in a point of view subservient to its dilatation, as is evident from his nomenclature of heart-diseases, has been placed in a somewhat original and truer light by Bertin, who divides its varieties into three kinds,—the simple, the eccentric, and the concentric. The last of these seems to have been altogether unnoticed previously, though in reality it is less rare than the simple variety.

According to M. Bouillaud, hypertrophy of the heart hardly, if ever, exists in an insulated form; being almost always complicated with chronic pericarditis or endocarditis, or their consequences; and, where the valves and orifices of the heart are in a healthy condition, it does not give rise to any such train of symptoms as has been ordinarily but erroneously ascribed to what was formerly called active aneurism of the heart. The connexion of cerebral apoplexy with hypertrophy of the left ventricle, first perhaps pointed out by Legallois, and powerfully advocated by Richerand and Bricheteau, is well made out by numerous cases in the present work. Of fifty-four cases of hypertrophy here detailed, eleven (that is, above one-fifth,) present the coincidence of cerebral hemorrhage or of softening of the brain; and this in individuals of various ages, from twenty-five up to seventy-nine. M. Bouillaud falls into an error when he supposes that he is the first to have noticed the frequent co-existence of ossification of the cerebral arteries with apoplexy, as it is mentioned very expressly, and at some length, by Dr. Baillie, who views these phenomena in the relation of cause and effect. The opinion was subsequently alluded to, and we think successfully combated, by the late Dr. Cheyne, in his valuable treatise on Apoplexy.

Destruction of the eye by inflammation has been placed by Testa and Corvisart amongst the occasional consequences of organic diseases of the heart; but there is but a single case as yet, as far as we know of, adduced in support of the opinion. Gangrene of the limbs has also been ascribed to the same cause; but, in all the cases which have fallen under M. Bouillaud's notice, the gangrene has appeared to originate, not as a direct consequence of the heart-disease, but from obstruction of the artery leading to the part by means of a coagulum:



whether, however, this state of the blood be the cause or the consequence of the gangrene, admits, we think, of question. In the 131st case, both the vein and the artery were thus obstructed. Though hypertrophy of the right ventricle is acknowledged to be very much rarer than that of the left, Laennec was evidently in error when he states that it never reaches a high pitch, as M. Bouillaud has mentioned three cases in which the parietes of the right ventricle varied from eight to sixteen lines in thickness. The concentric hypertrophy, or that with diminution of the cavity affected, may be explained by supposing it to originate in inflammation of the inner membrane of the heart, which will probably affect most especially the more internal muscular layers, and thus lead to their disproportionate development, and consequent encroachment on the interior of the ventricle. When, on the other hand, there is great dilatation, together with hypertrophy, it is usually dependent on obstacle to the circulation from a diseased state of the orifices, and is generally first apparent in the cavity just behind such obstruction. So frequent is the coincidence of hypertrophy with chronic pericarditis or endocarditis, and their consequences, that, when the latter exist, we may almost unhesitatingly conclude that the former is present also. Thus, out of thirty-three cases of these membranous inflammations given in the present work, which terminated by induration, thickening, &c., hypertrophy was not absent in a single one. To the circumstance of the thickening of the muscular structure of the heart being so much more conspicuous than that of the membranous, in their respective chronic states, may be ascribed the almost exclusive degree of notice which the former has met with: and yet there are many analogous instances where the inflammation of the lining membrane of other hollow muscular apparatuses (as the stomach, intestines, bladder, &c.) eventually gives rise, by means of long-continued irritation, to hypertrophy of the adjacent muscular fibres; and the analogy might be pursued still further, by observing that, in these cases likewise, an obstruction to the free course of the matters contained within them often exists, and forms a link in the chain of cause and effects, giving rise in some cases to dilatation, and in others to contraction.

The idiopathic signs of hypertrophy of the heart consist in the permanent augmentation of the force and extent of its pulsations, and a consequent augmentation, according to M. Bouillaud, of the intensity of the double sound. If to these we add an increase in the extent to which dullness is perceptible on percussion in the præcordial region, and occasionally a notable prominence in the same part, he thinks we have enumerated all its proper signs. The whole mass of the heart, instead of the mere point, seems to come into contact with the side of the chest at each beat. The pulsations in hypertrophy, it is further stated, are irregular, save in such cases where contraction of the orifices or a nervous affection of the heart coexists with it. Muscular substance being a bad conductor of sound, when the thickness of the walls of the heart is excessive, (twelve to fifteen lines and upwards,) and the cavities are at the same time diminished, the double sound is, he confesses, rendered somewhat obscure, and as it were smothered; but, where this thickening is moderate, and the capacity of the cavities is not lessened, or is, on the contrary, increased, these sounds become stronger and clearer, and are audible over a greater extent of the chest than natural; the sound produced by the impulse of the heart against the side having somewhat of a metallic ringing character. The bellows sound, it is asserted, is very rarely present in cases of simple hypertrophy, and then only during the existence of palpitations. So very rare is it in such cases, that its existence should, in almost every instance, lead us to suspect some complication of disease about the valves or orifices. The extent to which dullness on percussion is heard is in the joint ratio of the hypertrophy and the dilatation. The prominence of the præcordial region, which is sometimes obvious to the eye and touch, and susceptible of accurate measurement, was, we believe, first noticed by our author, who gives several cases where it existed, and in which there was evident increase of space between the ribs of the left side. The pulse in the simple and in the aneurismal variety of hypertrophy of the left ventricle, in their uncomplicated state, is strong, large, vibrating, and regular. In the concentric variety, or that with diminution of the

cavity, the pulse is vibratory, but small and cord-like. In all there is a tendency to active hemorrhages; the animal heat is slightly increased, the eye brilliant, and the colour florid, with occasional flushings. Where, however, complications exist, the above characters of the pulse are not to be expected; and it is in the latter cases only that passive serous and sanguineous effusions and congestions take place.

In uncomplicated hypertrophy of the heart, the respiration is not materially affected till the organ has acquired such a volume as to encroach on the lung; yet the great majority of writers on cardiac diseases have ascribed to hypertrophy, or active aneurism, such symptoms as the following; a violet hue of the face, and general congestion of the venous capillaries; passive dropsies and passive hemorrhages, dyspnoea, &c.; but these are in reality only so many signs of mechanical obstacle to the circulation, and indicate disease in the orifices, valves, &c.

In the present state of our knowledge, M. Bouillaud thinks it impossible to discriminate hypertrophy of the auricles during life; yet it so generally accompanies that of the ventricles, that he asserts we may, for the most part, conclude the existence of the former when we are able to recognize that of the latter. There seems to be a considerable probability that pulmonary apoplexy is occasionally dependent on hypertrophy of the right ventricle; but the three cases given in support of this view in the present work cannot be considered as at all conclusive in themselves, inasmuch as hypertrophy of the left ventricle coexisted in two of them.

In two cases detailed by our author, hypertrophy of the heart appears to have assumed an acute form, the period of obvious symptoms not exceeding three or four weeks; the patient in one instance being twenty-two, and in the other about forty years of age; but these cases, as it is very prudently admitted, want the additional confirmation of future ones, as they were not, as is obvious on their perusal, unexceptionable; and M. Bouillaud himself is far from having made up his mind as to the certainty of the disease ever having so very rapid a course.

In his views of the treatment of hypertrophy there is nothing particularly new. As to blood-letting, he lays it down as an approximative rule that it should be repeated three or four times, together with one or two cuppings of from eight to twelve ounces. In digitalis, (the true opium of the heart, as he terms it,) administered in the endermic manner, he seems to have much more confidence than most French practitioners.

*Atrophy of the Heart.*—M. Bouillaud brings forward but a single case, that of a woman about sixty years of age, the beat of whose heart is described as having been extremely feeble, and very limited as to the extent in which it was perceptible to the hand. Its sounds were so weak as to be audible only in the intervals of the respiration: there was no bellows murmur. On dissection, the organ was found to be a full third less than the natural size, or about equal to that of a child of ten or twelve years old; wrinkled and withered, as it were, on the surface, where were observed some whitish patches, indicative of an old pericarditis. The left ventricle could scarcely contain a pigeon's egg, and the thickness of its walls did not exceed three lines; the cavity of the right ventricle was rather larger, and the walls were about one and a half lines thick. Burns has mentioned a much more marked case than this, where the heart of an adult did not exceed that of a new-born infant; and another, where the heart of a woman, of twenty-six years of age, was about equal in size to that of a child of six years. Amongst the local causes of this affection are enumerated the pressure of effused fluids within the pericardium, and contraction of the coronary arteries by disease; and, among constitutional causes, whatever tends to produce marasmus of the body at large, tubercular and cancerous diathesis, ulcerations of the intestines, &c., can scarcely fail to effect some alteration in the size of the heart.

The *Neuroses of the Heart* have met with little attention hitherto. Corvisart omits them altogether; Laennec despatches them in a few pages; and Andral, in that part of his *Medical Clinique* treating of diseases of the heart, has treated them with as little ceremony. Our author commences this part of his subject by

the consideration of nervous palpitations, which are so frequent in young persons addicted to excessive study and late hours, as well as in those who make an abuse of stimulants or indulge in sexual excesses; also in those of a chlorotic or anæmic habit, from whatever cause arising. The palpitations arising from the last-mentioned condition are daily confounded with organic diseases of the heart, to the infinite prejudice of the unfortunate patients; a mistake arising from the circumstance of chlorotic individuals being, as well as those labouring under organic affection, liable to dyspnoea and a sense of smothering from any exercise which is in the least fatiguing, as ascending a stair, &c. The diagnosis is the more important, as the treatment of the two diseases is diametrically opposite. This is a point to which we beg to call the most earnest attention of our readers, most especially our junior brethren, who are favourers of auscultation. We meet with no more common case of error in diagnosis and in practice than this, and we know of few more injurious, both to the system of the patient and the reputation of the practitioner. One half of the cases brought to men who have got a name for the treatment of diseases of the heart consist of these pseudo-cardiac affections. M. Bouillaud asserts that the chlorotic palpitations are for the most part unaccompanied by any well-marked bellows murmur in the heart itself; whilst, at the same time, this sound is almost constantly present in the great arteries, (carotids, crurals, &c.)

There is another variety of palpitations, which may be called the rheumatic, as they make their appearance in conjunction with wandering rheumatic pains about the præcordial region, darting from thence to the left arm: they are sometimes accompanied by slight intermittence of pulse, and cause considerable alarm to the sufferers, though in other respects they appear in high health. They are no more to be confounded with the palpitations originating in pericarditis or endocarditis of an acute rheumatic character, than is a pleurodynia with a pleurisy, being quite as distinct in their nature and tendency. Nervous palpitations are sometimes, no doubt, continuous; yet far more frequently they are, like most other nervous affections, intermittent. Andral and others are of opinion that their frequent recurrence may eventually give rise to organic disease, though there may have been nothing of this in the commencement; and, while in the stage of transition, the difficulty of making up one's mind as to the true nature of such cases is, it must be confessed, extremely difficult. By frequent examination with the stethoscope, especially in the absence of the palpitations, we must endeavour to ascertain whether the valves of the heart do their duty,—whether the orifices are in the natural condition, the walls hypertrophied or thinned,—as well as to satisfy ourselves, by the sight, touch, and percussion, whether there be enlargement of the organ. The absence of venous congestion, and of violet tint of the face, dropsies, &c., though the disease be already of some standing, adds to the probability of its being a mere nervous derangement. Yet, with all these aids, there are cases, as M. Bouillaud himself is obliged to confess, where there is very great difficulty in forming a correct opinion: namely, those complicated ones in which there exist simultaneously palpitations depending on organic disease and palpitations of a nervous nature; a kind of case more frequent, he believes, than has generally been suspected. M. Bouillaud insists earnestly on the importance of the physician using all his efforts to tranquilize his patient's mind, and relieve it from the vague apprehension of an organic disease.

With regard to *Neuralgia* of the heart, on which some stress has been laid by Laennec, M. B. is sceptical as to whether pains of the kind described have really their seat in this organ. That the pains are neuralgic, is unquestionable; but he thinks it more probable that they have their seat in the phrenic or intercostal nerves, and that in some cases it extends to the pneumogastric, cervical, and brachial plexus. Certain cases of nervous asthma, as well as of angina pectoris, he conceives may have this source. As to spasm of the heart, a disease likewise alluded to by Laennec, he believes it to be altogether an imaginary one, as there is nothing in the symptoms attributed to it indicative of true spasm. That this organ is sometimes liable to such an affection, in its more ordinary sense, is, however, we think, fully borne out by the group of morbid phenomena generally known under the name of *Angina pectoris*.

*Change of Dimensions in the Cavities.*—In the section treating of changes in the dimension of the cavities and orifices of the heart, our author remarks that the contraction of the latter has been dwelt on by Corvisart and previous writers; but that the diminution of the cavities themselves had been quite overlooked, till Bertin pointed it out. Dilatation with thinning of the walls, or passive aneurism, as it was called in the old nomenclature, is much rarer than that accompanied with their thickening, or active aneurism. With regard to partial dilatation, or false consecutive aneurism of the heart, as it has been termed by M. Breschet, he remarks that, although insulated cases of it had from time to time been recorded, it is only lately that it has been studied with the minute detail which it merits. These aneurismal tumours are sometimes, but improperly, named *true* aneurisms of the heart: they are in reality, in almost every case, what we have called them above, *false consecutive* aneurisms; for the rupture of the interior layers of the parietes of the organ is one of their fundamental characters: but, as there is no rule without its exception, these ruptures have been, it is admitted, in some few cases, preceded by a partial dilatation. The situation in which this partial dilatation has been most frequently presented to M. Bouillaud's observation is the pulmonary portion of the right ventricle.

Dilatation of the orifices of the heart is no less frequent than that of its cavities, and very often accompanies the latter. The principal cause of both lies in obstacle to the circulation, and the consequent accumulation of blood and distention of the containing parts. The auricles are more prone to such dilatation than the ventricles, because their muscular parietes, being thinner, have less power of resistance; and for the same reason the right ventricle, when compared with the left, is as it were predisposed to it. The cavities immediately behind the obstruction are, generally speaking, the first to dilate; but this is not universally the case; for sometimes, in consequence of the unequal power of resistance of the different cavities, that which is nearest to the obstacle is not dilated so soon as one of the more distant ones. Thus, where there is induration of the aortic valves, with contraction of the orifice, the left auricle may become dilated before the left ventricle. Moreover, in consequence of the connexion and communication between the different cavities of the heart, any great obstruction to the course of the blood, wherever situated, may at length induce a general dilatation of all the cavities of this organ, and even of several of the larger vascular trunks. Amongst the more conspicuous exciting causes of dilatation of the heart are to be reckoned violent exercises, and all such occupations as make large demands on muscular exertion, passions of the mind, distortion of the vertebral column, and all the malformations tending to curtail the natural dimensions of the chest: and even, as our author subjoins, compression of the trunk by injudicious clothing. But of all the causes, the pathological condition of the valves and orifices alluded to above is indubitably that which plays the chief part in its production.

We are under the necessity of passing over several chapters, partly because our limits will not allow us to notice them, but chiefly because they possess more of pathological than practical interest. All are, however, well worthy of perusal, and indeed demand the attentive study of every practitioner, who would be master of this important class of affections. The diseases which we omit are the following:—Syncope; Wounds of the Heart; Rupture of the Heart; Displacement of the Heart; Hernia of the Heart; Congenital Malformations of the Heart. The last class comprehends the following varieties: 1. dextrocardia, or transposition of the heart; 2. communication between the right and left cavities; 3. acardia, or absence of some of the parts constituting a normal heart; 4. bicardia, or increase of the number of normal parts; 5. malposition of the great vessels.

*Polypi of the Heart.*—In an appendix, the oft-mooted question of the coagulation of the blood in the cavities of the heart, and the formation of polypiform emanations during life, is discussed. These polypi are divided into the recent or the amorphous, and those which have been formed a longer time before death, and gives traces of incipient organization. Above twenty supposed cases of the

latter are to be found in the course of the present work. As to the former, M. Bouillaud believes that the majority are found during or only shortly prior to the agonies of death, at the same time admitting that some may be of later origin; and that these are not very readily distinguishable from the others. When the coagula are colourless, very adherent, and closely twisted round the columnæ carneæ, there is reason to believe them of a date considerably anterior to death. Several of the additional cases of polypous concretions given in this appendix are taken from M. Legroux's work, published about eight or nine years ago, and little new light has we think been thrown on the subject since. M. L.'s account of their several stages is as follows:—first, the concretion forms, acquires a certain general density, and afterwards becomes softened in its centre, so as to form a kind of cyst filled with a sanious fluid, which subsequently assumes a purulent character; the pus is absorbed, the cyst becomes adherent to the adjacent parietes of the containing cavity, and penetrated by vascular ramifications. One of the best-marked instances of organized fibrin within the heart occurred to M. Senn, in the case of a girl of eighteen, in whom the right auricle was in great part filled by a concretion, in the centre of which there were vesicles full of a semi-concrete liquid. This polypiform concretion was traversed by an infinite number of vessels, some of a bright red, others of a dark colour. It extended into the superior cava, right subclavian, and right jugular veins, &c. with the walls of which it seemed to be connected by a continuity of tissue. It is in the right side of the heart that these concretions most frequently occur, and the auricles are most commonly their seat than their respective ventricles. M. B. attributes the first of these circumstances to the course of the blood being more easily embarrassed in the right cavities, and partly also to the frequency of inflammation of the veins, and its propagation to the right side of the heart. He is inclined also to ascribe some influence to the greater disposition to coagulate in venous than in arterial blood. The anatomical character of these sanguineous concretions differs much, says M. Bouillaud, according to the period of their formation, and as they are mixed or not with pus or pseudo-membranous matter. The amorphous recent concretions do not differ essentially from the coagula formed in blood taken out of the body. The organized concretions, again, present very different appearances according to the date of their formation. In the first degree of organization, they are whitish, elastic, slightly adherent to the walls of the heart, and especially to the columnæ carneæ and tendons of the valves, round which they are often twisted. They are like the buffy coat formed on the surface of inflammatory blood, or like the false membranes of serous tissues in a state of incipient organization, and manifest various intermediate degrees of tenacity as they pass from the gelatinous to the fibrous condition. In a still more advanced state, they adhere by true cellular membrane to the parts on which they are formed, and into which they are as it were grafted, being penetrated by blood-vessels, and gradually acquiring additional firmness till they come to resemble in their structure fibrous polypi or fungous vegetations. He corroborates Legroux's account of their occasionally containing pus in their interior, so as to resemble cysts. They sometimes, as we have just seen, adhere firmly to the valves, and may thus lay the foundation of organic derangement to the form or structure of these important parts; but to the production of this effect the presence of inflammation would appear to be necessary. It is difficult to say whether these concretions are formed at the expense of the blood contained in the heart or are a secretion from the inflamed tissue. M. Legroux and M. Bouillaud incline to the latter opinion. The purulent matter occasionally contained in their interior is believed by the former of these gentlemen to be the product of their own secretion; but from this opinion our author dissents, believing that it comes rather from the lining membrane of the heart, or that it has been transported thither from some other part of the body, and has subsequently caused the formation of a clot in which it is at length enveloped; for it is found, even at that early period when the containing coagulum affords us yet little or no trace of organization.

The principal symptoms to which polypi of the heart can give rise are connected with the obstruction thrown in the way of the circulation by their occupa-

tion of the cavities and orifices of the organ. Their causes are either mechanical, viz. such as oppose the free current of the circulation, or chemico-vital.

The blood drawn from the patient in the agonies of death, or with great obstruction of the cardiac orifices, is very prone to coagulation, escaping from the vein in a thick semi-concrete state; and it is just in such cases that coagulation is most apt to take place within the heart, and give rise to those sudden and unexpected deaths so common in cases of heart disease. Of the chemico-vital causes of such coagulation, inflammation of the lining membrane of the heart is one of the principal; and the introduction of foreign substances into the torrent of the circulation, as pus, for example, in another. In the majority of the cases in the present work, where these fibrinous concretions were not connected with any mechanical obstacle to the circulation, they coincided either with an idiopathic inflammation of the heart or with an inflammation of some other organ reacting on the heart and entire circulation, the blood being then peculiarly prone to coagulate firmly, and form the buffy coat. These polypiform concretions, acting as obstacles to the circulation, and occurring especially in the right side of the heart, will necessarily, when in any considerable quantity, tend to impede the return of the blood from the different organs,—the brain, liver; or hence apoplectic symptoms, serous effusions, &c; and, as but a small quantity of the blood can reach the lungs, so as to be duly aerated, the phenomena of asphyxia will also occasionally manifest themselves. When their seat is in the left side, in addition to the above, dyspnoea will be a prominent symptom, inasmuch as the blood will be admitted with difficulty from the pulmonary veins, and congestion of the lung be thus effected. When the polypi interfere with the play of the valves, their effects will be the most distressing. The most remarkable of their symptoms are a tumultuous action of the heart, with dulness and diminution of the natural sounds; a bellows murmur, occasionally of a sibilant character; great anxiety; venous congestions followed by a comatose state and stertor, and occasionally preceded by convulsions, smallness of pulse, and coldness of the extremities. The sudden occurrence of such a group of morbid phenomena in the course of a pericarditis, or endocarditis, may sometimes enable us to announce their formation; and so also in chronic diseases of the heart, which had previously presented none of these violent symptoms. The prognosis in these cases is necessarily bad, and most so when the disease they accompany is in itself of a dangerous nature.—Treatment is almost out of the question.

In this article, which is rather an abstract than a review of M. Bouillaud's important work, we have endeavoured to place the actual state of knowledge in respect to cardiac disease before our readers, as fully as our limited space would admit of. We cannot take leave of the author without once more intimating that this, his greatest production, fulfils the promise of his earlier doings, and confers infinite credit on his zeal and industry. Like Morgagni's and some other standard books of former days, the one before us contains such a mass of carefully noted cases and dissections that whatever may be eventually the fate of the hypothesis in it,—(and they form after all, but a very inconsiderable portion of it,) or whatever future changes may take place in the theoretical parts of our art generally, this work must long keep its ground, and be held in high estimation as a rich magazine of well-observed pathological facts.

## PHYSIOLOGY.

### ON THE VITAL OR SELF-MOVING POWERS INHERENT IN THE BLOOD.

BY R. M. HAWLEY, M. D.

At the meeting of the British Association held at Dublin, in 1835, Professor Alison read a paper "On the Vital Properties of Arteries leading to Inflamed

Parts," in which he attempted to prove by experiments that "a living or self-moving power is inherent in the blood itself, acquired by its purification in the lungs, and in some degree retained through its whole circuit."—In the present short paper, Dr. Hawley adduces further evidence in support of these views, and considers that the following propositions are established by Dr. Alison's researches and his own.—1. That the motion of the blood from the branches of the pulmonary artery to the left auricle *principally* depends, neither on the systole of the right ventricle, nor on the tenacity of the vessels, nor on the respiratory motions, but on a living self-moving power acquired by the blood, when renewed in the lungs. 2. That the same living power inherent in the blood is also a material cause of its motion through the capillaries of the aortic system. 3. That, in acute inflammation, this vital self-moving power of the blood is morbidly increased; while the tonicity of the capillaries of the inflamed part is diminished. 4. That some formidable diseases of the heart, lungs, and brain, usually considered primary, may be referrible to an altered state of this vital power of the blood; and perhaps oftener to its diminution than its augmentation.—*Edinburgh Journal for October, 1836.*

#### DETERMINATION OF THE QUESTION, WHICH ARE THE NERVES OF TASTE?

BY B. ALCOCK, M. D.

This is a long and valuable paper, which was read at the meeting of the British Association, in 1836. It contains the results of many experiments made by the author, and critical remarks on the views of others. We regret that we must content ourselves with the bare enunciation of the inferences which the author has deduced from his experiments and reasonings, which are the following:—1st. That Taste is a special sensation. 2d. That it enjoys two media of perception. 3d. That its media of perception are the glosso-pharyngeal nerves and the lingual and palatine branches of the fifth nerves. 4th. That the glosso-pharyngeal nerves are not its special media. 5th. That the latter nerves both are sentient and influence muscular action; and 6th. That the spheno-palatine ganglion and chorda tympani have no influence upon either the existence or perception of the sense.—*Dublin Journal, Nov. 1836.*

#### ON DIGESTION.

BY DR. SCHWANN, OF BERLIN.

It is known that Eberle discovered in the year 1834, that the mucous membranes, when digested in dilute muriatic and acetic acids, furnished a mass similar to the gastric juice, which dissolved, and altered most alimentary matter, in a manner similar to what takes place by digestions in the stomach. The same fact was stated by Müller and Schwann with regard to coagulated albumen; and further, the latter experimenters have proved, that in this operation there is neither change in the contiguous atmosphere nor disengagement of gas. From these facts it was interesting to know what the bodies are which in the natural gastric fluids, of which Eberle has recognised the identity of action with the acids mentioned above, produce the solution and modifications undergone by the alimentary matter in the interior of the stomach.

The first experiments of Schwann on artificial digestion, indicated that there was not one sole dissolving agent, but that the bodies, which are the agents of this solution, are themselves different for different kinds of alimentary matter. The attempts made hitherto upon this class of phenomena have demonstrated that these latter substances may be ranked under three classes.

1. Those which, without the assistance of the free acids of the gastric juice, may be perfectly digested by the saliva; to this class belongs starch exposed to the action of heat, which, by artificial digestion in the saliva, as well as in the stomach, is converted into gum and sugar.

2. Those which are only dissolved by dilute muriatic or acetic acids: to this class belongs coagulated caseum, gelatin, or gluten. At least, the reactions which are exhibited in solutions of these substances in dilute acids agree in the principal particulars with those which Tiedemann and Gmelin have observed in the natural digestion of these substances. Gelatin, for example, in this way loses the property of coagulating and precipitating by chlorine which characterizes it.

3. Those to which, besides the free acids, the assistance of another digestive principle is still necessary; such are all the albuminous substances, and especially the coagulated white of egg, fibrin, and, to a certain extent, dissolved caseum.

This latter class of substances has particularly attracted the attention of the author, both because it contains the most important alimentary matter, and because they answer perfectly for experiment.

In order to make these experiments, a *digestive fluid* was procured by digesting, for 24 hours, the mucous membrane previously prepared from the third and fourth stomach of an ox in water, acidulated with  $2\frac{1}{2}$  per cent. of muriatic acid, and filtering the fluid. This digestive liquid thus prepared contained nearly  $2\frac{1}{2}$  per cent. of solid matter in solution, and required above 2 per cent. of carbonate of potash to neutralize it. It dissolved almost entirely coagulated white of egg, by exposure for several hours to a temperature of  $100^{\circ}$ . The researches of Müller, and of several other chemists, have proved that acids simply diluted do not dissolve albumen; and that consequently acids by themselves have no action, and that something else must assist in the act of digestion. Schwann had observed, besides, that the digestive liquid described lost its action by saturation, and that consequently acid must play an important part in digestion; but that, independently of acid, the presence of another body is still necessary. The researches, then, upon the action of acid tend to demonstrate the following facts:—4. That there is nothing less than naturalization of the digestive fluid, from which nothing has been precipitated, that can deprive it of its digestive power. 2. That the digestive fluid diluted with acidulated water produces good digestion, but not if it is diluted with water only. The necessary quantity of acid not being regulated by that of the digestive principle, but by the quantity of water, of which it ought to amount to about  $2\frac{1}{2}$  per cent. for the muriatic acid of commerce. 3. That the quantity of free acid by the act of digestion remains unaltered.

Hence we have a right to conclude, that the free acid assisted not only in the formation of other digestive principles, and for solution, or to form chemical combinations with them, but besides that, it acts by the effect of contact, as in the transformation of the starch into sugar.

It remained to investigate the properties of this other *digestive principle*, which is active, and independent of the acid. The new researches of Schwann have in the first place proved that the digestive fluid when filtered and perfectly clear dissolves albumen, and that it is itself soluble in dilute hydrochloric and acetic acids; that when it is neutralized and filtered, and a certain quantity of acid is added to the clear liquid, this fluid preserving its digestive power, the principle must remain in the state of solution in the neutral fluid, and that if neutralized the digestive fluid is evaporated at a very low temperature, so that it shall not lose its property, and if the residue be treated with alcohol, the digestive property disappears; that the digestive principle is equally destroyed by alcohol; and lastly, that when heated to the point of ebullition the fluid and the principle were decomposed.

To test the action of ordinary re-agents, Schwann confined himself to mixing each of them with the digestive fluid in an acid or neutralized state, by separating by filtration the precipitate from the liquid portion, washing carefully the former, and re-dissolving them in water containing  $2\frac{1}{2}$  per cent. of acid; and lastly, treating by a new re-agent, which might increase at least in part the effect of the first, such, for example, as sulphuretted hydrogen. In this manner, according as the digestive property remained in the fluid containing the precipitate, or in that which had been filtered, and which contained the unpre-



epitiated parts, the digestive principle was separated by the re-agents, or resisted their action. By this means it is ascertained that acetate of lead precipitated this principle from the acid digestive fluid more completely than in that which had been neutralized; that this principle is equally precipitated from neutral solutions by corrosive sublimate, but not in the acid digestive fluid by the ferrocyanodide of potassium. One of the most characteristic re-actions is the precipitation of caseum, or the coagulation of milk. The latter when heated by the digestive principle exhibits the following results:—1. The digestive fluid produces the coagulation of milk by means of heat, when its quantity does not exceed 0.40 per cent.; while for a liquid which contains only hydrochloric acid diluted to the same degree, it requires more than 3.3 per cent. 2. An elevation of temperature to the boiling point removes this property from the neutralized digestive fluid, which authorizes us in concluding that the digestive principle is thus destroyed. 3. The digestive fluid and the caseum dissolved, may be mutually employed as re-agents; a fluid which only contains .0625 per cent. caseum affords still a sensible precipitate with the neutralized digestive fluid.

These various re-actions of the digestive principle characterize a new substance to which Schwann proposes to give the name of *pepsine*; and it is obvious that the manner in which this substance acts with caseum is sufficient to distinguish it from all others, and especially from mucus. Mucus appears to be the substance at the expense of which the *pepsine* by a peculiar transformation, and treatment by dilute hydrochloric acid is formed; at least pure mucus, that of the saliva for example, treated by dilute hydrochloric acid exhibits, although in a feeble degree, the power of dissolving albumen. In reference to the action of the digestive principle upon albumen, Schwann considers it to be the effect of contact; this conclusion is especially drawn from the small quantity of pepsine which is sufficient to dissolve a great quantity of albumen. Acidulated water, which contains only  $\frac{1}{4}$  per cent. of digestive fluid, still manifests sensibly the power of dissolving albumen, and with  $\frac{1}{4}$  of an ounce of acidulated water to which 4.8 grains of digestive fluid have been added, nearly a drachm of coagulated albumen of the white of egg will be dissolved in 24 hours at the temperature of 99.5. Now as 4.8 grains of digestive fluid only contain 0.11 grains of solid matter, and as 1 drachm of moist albumen weighs about 10 grains after desiccation, we see that in considering all the solid matter contained in the fluid as pepsine, 1 part of this substance acts upon 100 parts of albumen. As in this action the digestive principle loses a great part of its digestive properties, it follows that it has undergone a change; however it should be observed, that among the conditions necessary for development of this action in the most complete manner a temperature of from 99.5 to 132° is required, but it is still manifested at 34 $\frac{1}{2}$ ° and 59°. At the favourable temperature, coagulated albumen when it has been sufficiently comminuted, dissolves in from 6 to 24 hours, fibrin extracted from the blood in from 3 to 12 hours. The presence of the contact of atmospheric air, according to Müller and Schwann is not necessary in this action, and there is no evolution of gas; some salts, such as the sulphate of soda, which acts equally upon the vinous fermentation, oppose the digestion of albumen.

The changes which albumen and fibrin undergo by the action of pepsine united with acids, is not a simple solution, but a decomposition, since the first of these substances occasions—1. A substance which resembles the coagulated albumen of eggs, which is entirely dissolved in the acid, and is precipitated by neutralization. 2. Osmazome. 3. Mucus. The digestion of the fibrin gives the same products with the exception that the fluid in which the fibrin has been dissolved does not contain coagulated albumen, which can be precipitated by an elevation of temperature. Boiled and raw muscular fibre dissolve like fibrin, although with a little more difficulty.

In conclusion, Dr. Schwann refers to his original paper inserted in *Müller's Archiv*. 1836. s. 90.—*British Annals of Medicine*, March 3, 1837, and *Poggen-dorf, Annalen*, xxxviii. 538.

## WEIGHT OF THE HUMAN BODY AT DIFFERENT AGES.

M. Quetelet, of Belgium, shows:—

1st. That the weight of the male infant, at birth, is nearly 7lbs. avoirdupois; while that of the female is not quite 6½lbs.

2d. That the maximum weight (140½lbs.) of the male is attained at the age of 40; while that of the female (nearly 124lbs.) is not attained till 50: from which ages they decline afterwards; the male to 127½lbs., the female to 109lbs.—nearly a stone.

3d. That the full grown adult is twenty times as heavy as the new-born infant.

4th. That the rate of growth varies: in the first year, the child triples its weight; afterwards the growth proceeds in geometrical progression, so that if fifty infants in their first year weigh 1000lbs., they will in the second weigh 1210lbs.; in the third 1331lbs.; in the fourth 1464lbs.; the rate remaining very constant up to the ages of 11—12 in females; and 12—13 in males, where it must be nearly doubled; afterwards it may be continued, and will be found very nearly correct up to the age of 18 or 19; when the growth proceeds very slowly up to 40. The weight of any number of children between 2 and 9 years of age being known, their weight, the amount of matter they can incorporate in twelve months or two years may be calculated.

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## PATHOLOGY AND THERAPEUTICS.

### CASE OF SPECTRAL ILLUSION.

BY MR. CRAIG.

We had marked for insertion in our last number, under the head of *Spectral Illusions*, the following very curious statement, published in the *Edinburgh Journal* for Oct. 1, 1836, but which was crowded out by the press of other matter.

A gentleman of great mental endowments, and master of fourteen languages, then in his 76th year, began (1819) to have daily visitations of spectral images—at first occasional, afterwards more constant. In general, they presented human countenances and figures—the head and upper parts being much more defined than the lower. He rarely recognized any of his acquaintances.—The dresses were various, but generally antique, and consequently such as he had seldom seen, except in paintings. His own countenance was sometimes presented to him, gradually undergoing all the changes from youth to senectude. The figures were seen at different times in the day, and equally well when the eyes were open or shut. They were almost always of an agreeable character, and afforded a source of amusement. He had the power of calling them up, and of banishing them at pleasure. They were sometimes as large as life—sometimes much smaller. From the commencement of the spectral images, the gentleman continued his usual practice of taking little or no wine—if he transgressed, the number of images increased, and also their vivacity. They continued to recur for a series of twelve years, with very little change of character. His mental faculties appeared to be very little deteriorated—not more at least, than might be expected from age. When turned of eighty, he journeyed to London, “to dine with the Knights of the Bath,” and returned by post at the rate of one hundred miles a day! He had now, when nearly ninety, great anxiety about a pension, the diminution of which was menaced!!!—His memory became very much impaired; but recovered to a considerable extent. When the cholera

broke out in 1832, he was President of a Board of Health—and rigidly adopted the stupid rules of Cholera Boards in general. On the 21st August, 1832, while sitting at dinner, he lost the power of speech, but without loss of any sensorial power. A long detail of symptoms follows, which are little interesting. He was visited at various times by Mr. Liston, Dr. Abercrombie, Dr. McIntosh, and others, who prescribed blisters, aperients and other remedies that seemed very proper.—When a little power of utterance was acquired, the language was a jargon of the fourteen languages, which nobody could understand. Afterwards, however, he became more intelligible, and informed his attendants that the spectral images continued. One night he saw his wife traversing the room, and beckoning him to follow her. She had been dead many years. She seemed to glide out of the window, and through the same aperture he jumped out, and fell on the grass, from a height of seven feet and upwards. He got up immediately, and pursued the spectre through the conservatory and other places which had been her usual resorts. On being reminded that his wife was dead, he suddenly recollected himself, and mentioned the circumstance no more. He amended considerably, though he could seldom make himself understood as to his wants or wishes. His symptoms were invariably aggravated by disordered digestion or bowels. A question arose as to the sane state of his mind, and whether or not he was capable of executing deeds, &c. It was determined that, though he was unable to sign his own name, or give any intelligible directions, yet that he was of sane intellect. Mr. Craig's opinion was, that "his thinking faculty was quite correct, but the power of expressing it wrong." We believe that this definition of the nonagenarian's state was as near the truth as possible. His condition was nearly the reverse of the maniac or monomaniac, whose notions are wrong, but who is very capable of correctly expressing those notions.—From March till May, 1834, he went on rather improving. In the winter of 1835, his pulse became much more irregular than usual, and dropsical symptoms appeared, with some difficulty of breathing. In December of the same year, he fell down stairs, and was found in a state of insensibility, but recovered sense, apparently from hæmorrhage, from a branch of the occipital artery divided by the fall. In March, 1836, he became affected with symptoms exactly resembling *delirium tremens*. He walked about for 36 hours incessantly, imagining that people were in the room and under the carpet. He took a large dose of muriate of morphia, slept for eight hours, and awoke in his ordinary state. In July, 1836, he caught cold, followed by considerable fever, which lasted nine days, and ended fatally, on the 15th July, in the 93d year of his age.

The body was examined on the 16th of July, in presence of Dr. Abercrombie, Mr. Craig, Mr. Flockhart, and Mr. Comb.

In opening the head, unusually strong adhesions were found between the *dura mater* and inner surface of the skull, which was removed with much difficulty. The portion of skull-cap which covered the right hemisphere was of moderate thickness. Considerable effusion over the surface and between the convolutions of the brain, and great vascularity over the whole, indicating extensive chronic inflammatory action, especially in the course of the superior longitudinal sinus, where the *dura mater* was uncommonly thick.

The brain was examined by cutting thin slices from the surface downwards, commencing with the right hemisphere, which was found sound throughout, with the exception of a small tubercle, about the size of a split-pea near the surface, and similar to what is often seen in strumous children. The right ventricle was also sound. The left hemisphere was examined in a similar manner, and in the posterior lobe of the brain there was a cavity rather exceeding two inches in length, running obliquely outside of the left lateral ventricle, lined with a yellowish membrane, and the brain around its circumference was much softened. The cavity was close to, but not communicating with, the ventricle, which was sound.

The remaining part of the brain was then removed, and the base examined, which also over its whole extent bore strong marks of chronic inflammatory action. The internal carotids at the junction of the optic nerves were ossified. The base was then examined by cutting off slices. In the middle lobe, on the

left side, a little behind the pituitary gland, and to the left of it, was a small diseased appearance, similar to what was in the posterior lobe, not exceeding a quarter of an inch in extent. No other diseased appearance except the increased vascularity was recognized.

The *cerebellum* was sound. On the posterior part of the *medulla oblongata* there was a small tubercle.

The thorax was opened. The right lung was found remarkably healthy; but the left lung adhering to the pleura. The substance of both lungs was quite sound. A good deal of fluid was effused both in the *pleura* and *pericardium*. The semilunar valves of the aorta were considerably ossified, and the *aorta ascendens* was enormously large, almost aneurismal, but sound in structure.

Dr. Craigie, says the *Med. Chir. Rev.*, has appended a commentary on this case of no less than fourteen pages. The commentary is learned, recherché, and, we think, judicious. We would only hint that it is rather prolix. He very properly remarks that "the appearances on dissection only disclose the ultimate effects of morbid action, while a thick veil is thrown over all the intermediate steps of the process." Alas! how applicable is this observation to the generality of diseases! Still, a study of this, and of every case, may lead to some practical conclusions, and advance, step by step, our imperfect science.

Dr. Craigie properly observes that spectral illusions are sometimes owing to gastric irritation, especially in hypochondriacal patients—probably attended, at the time, with disordered circulation in the brain. In the case above related there can be little doubt that cerebral disturbance was the cause. The dissection proved this sufficiently; but had there been found no traces of disease in the encephalon, it would not have been a proof that no functional disorder had previously existed. The illustrations, however, which Dr. Craigie has appended, are important, and will well repay the labour of perusal.

#### POST-MORTEM APPEARANCES IN CATTLE KILLED BY LIGHTNING.

A peasant with a herd of 27 cattle, had taken shelter under a tree during a thunderstorm. He fortunately escaped, but every one of his beasts was killed by the lightning. On examining them, numerous dark zig-zag lines or streaks, produced by the scorching of the hair, were observed on their left sides, extending from the neck and shoulders towards the flanks and udders. These streaks varied in breadth, from a quarter of an inch to two and three inches.

A high degree of putrefaction had already (21 hours after the accident) taken place in all the bodies: this had been favoured by the hot weather. The stomach and intestines were enormously distended with gas, and a dark bloody-looking, offensive fluid oozed from the nostrils, muzzle, anus, &c. The mucous membrane, at these different openings, had a blue or blackish hue. The cellular membrane under the skin, in the course of the streaks, was found to be ecchymosed, and the veins in every part of the body were gorged with a very black and thin blood. All the viscera were more or less congested. The spleen was quite flaccid, and of a pappy consistence. The blood in it and in the *venæ cavæ* had quite the appearance of tar.

In one beast, the right half of the tongue was denuded of its epithelium, the *velum palati* was divided, the epiglottis destroyed, and the trachea cleft along its whole length, as if it had been divided with a knife: the trachea and likewise the bronchi were filled with clots of black blood. No lesions, such as now described, were found in any other of the cattle. In all, the right cavities of the heart were gorged with tarry-looking blood. The brain and other parts of the nervous system did not exhibit any abnormal appearance.—*Medicinische Zeitung*, No. 10.

#### ON DROPSY FOLLOWING SCARLET FEVER.

BY J. STARK, M. D., EDINBURGH.

Dr. Stark has given an excellent account of the scarlet fever as it prevailed epidemically in Edinburgh, in the autumn and winter of 1835-36. In fifteen

cases dropsical sequelæ followed. In the most severe cases, the swelling came on suddenly without any previous complaint, and from a fortnight to three weeks after the disappearance of the eruption. The patient went to bed well, and in the night or the next morning the friends were alarmed by the sudden swelling of the body, attended with dyspnoea, moaning, restlessness, and sometimes stupor. In all the cases in which the urine was examined, it was found coagulable by heat. In many of the severer cases, the urine passed before the dropsy came on was very turbid, dark coloured, in a few cases bloody. In two cases it was suppressed. Exposure to cold seemed the immediate cause of the dropsy: the function of the skin being checked, the blood is thrown upon the internal organs, and the kidney, whose action is vicarious with the skin, particularly suffers.

In all cases, except the very mildest, he bled in proportion to the severity of the symptoms, and the relief experienced from it. In severe cases he bled from the arm until the pulse was affected: under two years of age, leeches were used. The bleeding was followed by small doses of the antimonial wine with the liquor ammon. acet., and, where the urine was suppressed, a large hot bran poultice was applied to the lumbar region. In milder cases, the same medicines with brisk purging. The warm bath was of the utmost advantage. There was but one fatal case, of a boy five and a half years old, whose parents would not permit bleeding or leeches. Dissection was not allowed.

[The explanation of the action of cold in producing dropsy is given by Dr. Stark as his own, on which he founded his practice, which was very successful. It is but justice, however, to Dr. Osborne to state that he had previously advanced an identical explanation. (See British and Foreign Medical Review, vol. ii. p. 223.)]—*Edinburgh Medical and Surgical Journal*, October 1836.

#### CASES ILLUSTRATIVE OF THE EFFECTS OF THE SALINE TREATMENT IN MORBID CONDITIONS OF THE BLOOD.

BY C. R. BREE, ESQ., STOWMARKET.

The mode of treatment introduced by Dr. Stevens has been cried up and cried down too much, and we still want sufficient evidence to enable us to decide on its merits. Mr. Bree's communication contains three cases, two of typhus fever and one of purpura. In all the cases amendment took place shortly after the administration of the remedy, but it is not so clear that these two events stood in the relation of cause and effect. In the first case, an ounce of wine was given every two hours, contemporaneously with the saline powder; and the benefit might certainly be owing to the former. In the second case, there is no proof of diseased blood, nor indeed of great severity of symptoms. The case of purpura occurred in an infant in an aggravated form, and there seems every reason to conclude that the saline treatment was most effective in removing the disease. The following is the formula of the remedy given to the child, (æt. fifteen months:)—℞. Sod. Carb. ℥ij.; Sod. Mur. ℥ss.; Pot. Chlor. gr. x.; Syr. Ros. ℥ss.; Aquæ, ℥i. M. coch. parv. ter die. We hope Mr. Bree will proceed with his experiments.—*Lancet*, October 1, 1836.

#### INFLUENCE OF MENTAL ON BODILY FUNCTIONS.

BY C. O'REILLY, M. D. DUBLIN.

A healthy young woman of a nervous temperament, was extremely affected on hearing of the death of her brother, and declared she could not survive him one week. She retired to bed, refused all sustenance for three days: on the evening of the fourth day she took a little food, which she vomited. She died during the night. The body was examined, but no morbid condition was detected. Several similar cases are referred to: hundreds might be added.—*Lancet*, Nov. 5, 1836.

## ON THE USE AND ABUSE OF ALOES.

BY E. GREENHOW, M. D., NORTH SHIELDS.

The object of the author of this paper seems chiefly to show, what all experienced practitioners know, that aloes, if long continued, produces irritation of the bowels, and particularly of the rectum; and that small doses are better than large. He says that from two to five grains will be sufficient: he might have said that half a grain, or even a quarter of a grain, will often be so, if minutely comminuted with mastich and rose-leaves, or many other inert substances. Dr. G. says that the addition of ipecacuanha has the effect of diminishing or removing its irritating effect on the anus; and that its addition to squill and other diuretics often greatly promotes their action.—*Medical Gazette*, November 19, 1836.

## ST. JOHN LONG'S LINIMENT.

Mr. Guthrie, having had presented to him, for the purpose of trying its effects, some of the once famous liniment of Mr. Long, selected some cases for its application, and also had it applied to his own person, he being affected at the same time with a pain in the knee, attended with slight lameness. The experiment was conducted openly at the Ophthalmic Hospital, the liniment being applied by Mr. Wood, the person who rubbed under Long. It was used in five cases, besides Mr. Guthrie's own, but the disease of one only is stated, viz. that of a boy who is said "to have come up amaurotic from the country." The result of the treatment is thus given by Mr. Guthrie: "It cured my knee and the boy's eye, and did good to all the remaining four." The liniment appears to be perfectly mild and harmless, looking like thick yellow cream, and having a faint turpentine smell. Applied to the skin, it felt cool and agreeable, and not in the slightest degree stimulating. It was assiduously rubbed on the part by means of a small, soft, round sponge: and, after a sufficient application, the part became red, and finally excoriated and inflamed. Mr. Guthrie attributes the whole effect of the liniment to the mode of its application, and nothing to its own virtues. In proof of this, he had himself rubbed with soap-suds in the same manner as was done with the liniment, and exactly the same result followed. "I should have said, if I had been asked," says Mr. Guthrie, "that the soap-lather was the most severe liniment of the two."

[The mystery of St. John Long's operations, and of his (doubtless) occasional success, seems thus cleared up; and we consider the profession much indebted to Mr. Guthrie for its solution. We do not doubt that this particular mode of counter-irritation may be very advantageously applied in many cases both of acute and chronic diseases.]—*Lancet*, November 26, 1836.

## EFFICACY OF CHLORINE IN SCARLATINA.

To the Editor of the Medical Gazette.

SIR,—Owing to the constant prevalence of scarlet fever, I am induced again to call the attention of the profession to the employment of chlorine in this too often fatal disease. A few years ago, when I resided at Bromley, in Kent, I published in the Medical Gazette some very remarkable cases of scarlatina, treated by my partner, Mr. Williams, and myself, in which the chlorine appeared to be highly useful. Not having the Gazette by me, I cannot recollect the exact time, but I think it was in September, 1830. However, I will venture to trouble you again with the particulars of one very striking case. It was that of a young woman in the service of Lord Farnborough. She had been to visit her parents in the country. Whilst there, her brother and sister died of malignant scarlatina. Soon after her return to Bromley Hill she fell ill, and had the disease in its worst form. I visited her first on a Sunday evening: I gave her an emetic of ipecacuanha, and then directed her to take a glassful of the

chlorine mixture as frequently as she could swallow it. Under this treatment the dangerous symptoms soon gave way, and on the Saturday following she was down stairs.

I could relate many more cases, in which equal success attended the use of this medicine. In short, out of a great number of patients who were at that time attacked by the disease, two only died, both in the village of Wickham, one an infant, the other a spoiled child, ten years old, whose parents would not allow either medicine or nourishment to be given against the child's inclination.

I hope I shall be excused for again expressing a wish that medical men will give this medicine a fair trial, as other means so often prove ineffectual. My practice is to give, in the first place, an emetic of ipecacuanha, according to the age of the patient; to avoid active purgatives, which are injurious to children (particularly large doses of calomel;) and then to give the chlorine as frequently as possible.

As it appears to me highly important that the chlorine should be well prepared, I will subjoin the formula for that which I use, which was given to me by Mr. Brown, surgeon, at Lewisham:—

R. Potass. Oxy. Mur. ʒij.; Acid. Muriat., Aquæ Distillat., aa. ʒij.

The acid and water to be mixed, and the oxymuriate dissolved in them. It is to be kept in a stopper bottle, in a dark place. Two drachms of this solution are to be put into half a pint of distilled water, to make the chlorine mixture.

I remain, sir, your obedient servant,

39 Queen Square, Jan. 25, 1837.

R. T. TAYNTON.

## SURGERY.

### ON THE SECTION OF TENDO ACHILLIS IN THE TREATMENT OF CLUB-FEET.

BY M. BOUVIER.

THIS is extracted from a memoir read before the Academy of Sciences, on the 5th and 12th of September, 1836. The variety of club-foot which consists of a forced extension of the foot is an effect of the permanent contraction of its extensor muscles and their tendon. The club-foot turned inwards is owing in a great part to the same cause. In both cases, the treatment consists in elongating the extensors of the foot by slow and sustained extension; the same end may be obtained by dividing the tendo Achillis, and retaining the ends apart: this is principally applicable in old cases, where machines only are often inefficient or dangerous, or where rapidity is essential. It was performed first in 1784, by Thilenius, near Francfort; since by Sartorius, Michaelis, and Delpech; and recently by Stromeyer. M. Bouvier has adopted a more simple operation than Stromeyer: he introduces under the skin covering the tendon a kind of needle, cutting on one side, by means of which he cuts the tendon through from its cutaneous surface inwards. The external wound is slight, and heals in a day or two. In a few days the foot is brought into its natural position, and the tendon unites in a few weeks without any signs of inflammation. Delpech and Stromeyer waited the commencement of union until they changed the wrong position of the foot; but M. Bouvier prefers separating the divided ends of the tendon immediately after the section: this prevents the pain caused by stretching the cicatrix, and does not risk the accident which once happened to Stromeyer, who found that the cicatrix could not be extended. M. Bouvier has traced in dogs the mode of reparation, and finds that a new portion of tendon is formed by successive transformations of the cellular sheath of the tendon. He illustrates his memoir with four cases.

The first case was that of a girl, æt. 14, who had had a club-foot since two years of age, owing to a scrofulous abscess. The section was made on the 15th

of January last: at the end of a fortnight, the foot, which before the operation was in a line with the axis of the limb, formed with it nearly a right angle, and eight days after, it had passed this angle. The disposition of the tarsal bones, altered by the long continuance of the deformity, was the only delay of the re-establishment of the functions of the limb.

The second case was still more remarkable, on account of the advanced age and indocility of the patient, who would never submit to the proper application of the apparatus after the operation. The patient was a man forty-six years old, who had had a club-foot of the right side since six years of age. The external wound healed the second day. Three weeks after the operation, the foot formed a right angle with the leg, and the continuity of the tendon was re-established. He left the hospital at the expiration of forty days. He now walks on his flat heel, and makes long journeys on foot.

The third case was that of a girl, aged thirteen, who had had a club-foot from the age of four, in consequence of paralysis of the right side of her body. The exterior wound, the size of a leech-bite, healed on the day after the section was made. Immediately afterwards the foot was bent, and eight days after it formed a right angle with the leg.

The fourth case occurred in the practice of M. Roux. A boy, twelve years old, had reaction of the heel, and subsequently club-foot, from a wound in the calf when two years and a half old. The tendon was divided by M. Roux on the 4th of August, and on the following morning the foot was brought to a right angle. In three weeks the cicatrix of the tendon was firm, and there was no trace of the deformity.

M. Bouvier has at present two cases under his care, in both of which he has divided the tendon: one is a young man, æt. 23; the other a woman, aged 53, in whose case machines are also necessary. M. Bouvier presented (besides the casts of these cases,) the cast of the foot of the first patient, operated on by Delpech twenty years ago, who was accidentally met with in Paris. There has been no relapse, the cure being still perfect.—*Journal Hebdomadaire des Sc. Méd.* No. 38, 17 *Septembre*, 1836.

## NEW METHOD OF REDUCING LUXATIONS OF THE HUMERUS.

BY M. C. GERARD. (Thesis.)

M. Gerard has employed the following plan to thirteen cases of dislocated humerus, during the last fifteen years. All the cases were recent; he thinks it advisable in all the kinds of dislocation. The patient being seated in a chair, an assistant, placed on the side opposite to the luxation, passes his arms around the neck of the patient, and, crossing his hands over the luxated shoulder, opposes the efforts made by the surgeon to replace the bone. The surgeon, stationed on the injured side, places his left forearm beneath the upper part of the dislocated bone, as near as possible to the armpit. He then approaches his patient so closely as to allow the cubital end of the dislocated humerus to rest against his own side, whilst he supports it longitudinally as near as possible to the trunk of the patient. The surgeon then draws the articulation in a direction upwards and outwards, and, without using much force, the bone is immediately replaced.—*Archives Gén. de Méd.* *Juillet*, 1836.

## NEW TREATMENT OF STRICTURES OF THE URETHRA.

BY M. JOBERT, Surgeon to l'Hôpital St. Louis.

Having ascertained the situation of the stricture, M. Jobert oils a bougie, and then dips it into calcined alum reduced to an impalpable powder: if the obstacle is considerable, he dips the bougie again in oil, and afterwards in calcined alum, so that there are two layers of alum upon the bougie. He introduces the instrument gradually, and presses it softly against the obstacle, and fixes it in the urethra by four tapes. Sometimes two hours are sufficient to conquer the



obstruction, and allow the patient to pass his water; at other times, it does not succeed until the next morning. It is necessary to introduce the bougie, similarly medicated, for many days successively, until it reaches the bladder. M. Jobert has found the most obstinate strictures yield to this treatment: the inflammation it produced was moderate, and the discharge soon ceased.—*Journal Hebdomadaire des Sc. Médicales*, 10 Sept. 1836.

### ON LITHROTITY

AS PRACTISED BY THE LATE PHILIP FERNANDEZ, ESQ.

This young surgeon, whose early death is much to be deplored, seems to have acquired a singular facility in seizing and crushing the stone in the bladder. The principle of his success is thus stated: "He saw that, when the bladder was injected, the surface would no longer be rugous but smooth, and that the stone would consequently be sure to roll to the lowest spot. He made it a rule in his operations, therefore, to come exceedingly close to the stone, without touching it; and then, having first opened his instrument, he gently pressed the part. The spot touched being thus made the lowest part of the bladder, the stone uniformly rolled into the instrument, and he had nothing to do but to close it and crush the calculus."—*Medical Gazette*, October 22.

### NEW TREATMENT OF ONYCHIA MALIGNA.

BY C. RAY, ESQ., FALKINGHAM.

Mr. Ray is opposed to the entire evulsion of the nail in this most troublesome disease, and justly states that it is useless to expect a cure until that part of the nail, at least, which acts as a constant source of irritation is removed. His mode of treatment is, after freely dividing the swollen parts over the root of the nail and cauterizing them, to apply poultices, and enjoin perfect quiescence of the limb. This mode of treatment, the caustic being reapplied every second or third day, brings the part into a state favourable for the partial removal of the nail, which is effected by passing a scissors from within outwards beneath the posterior angles on each side, and removing "an exact triangular portion," the two incisions meeting in a point in the centre of the posterior edge of the nail. After the separation of the nail, the wound is dressed with adhesive straps which are not to be removed for some days.—*Lancet*, November 12, 1836.

### MIDWIFERY.

#### SUCCESSFUL CÆSAREAN OPERATION FROM AN ACCIDENTAL WOUND.

BY N. E. PIGNE. (Thesis.)

A WOMAN, æt. 38, in the eighth month of her sixth pregnancy, was gored by a bull, whose horn effected a transverse wound, twenty-seven inches long, running from one anterior and superior iliac spine to the other. The surgeon found his patient cold and insensible, circulation imperceptible, the small intestines lying between the thighs, and covered by a quantity of coagulable blood. They were cleaned; and then was seen the rent in the uterus, from which a male child was spontaneously expelled, and lived for a fortnight. The funis had been ruptured by the fall of the child, and the placenta was extracted through the wound by the assistance of four fingers introduced into the cavity. The intestines were replaced, the edges of the wound in the abdomen brought together and kept in contact by the interrupted suture. This was covered with charpie spread over with cream, and bandages were placed round the body. The patient did not become conscious until two days after. On the fifth day the lochia appeared. On the twelfth day an eschar, which had formed on the abdominal

parietes, separated, and exposed the intestines for an extent of four inches. Nevertheless, by guarding this from the air and using tonics, it cicatrized. In a month, she rose from her bed, and has lived twenty years since without any other inconvenience than a small hernia of the left side.—*Archives générales de Médecine, Juliet, 1836.*

## ON BINDING THE ABDOMEN OF LYING-IN WOMEN.

BY HUGH LEY, M. D.

Dr. Ley is of opinion that the value of the bandage so commonly applied after delivery has been greatly over-rated. In his experience there is but one circumstance in which the bandage with a compress over the uterus is imperatively called for. It is in a form of hemorrhage described by Dr. Gooch, in which the uterus which had contracted is again dilated by hemorrhage taking place into its cavity: in these cases, it is not only requisite that the uterus should be cleared of the coagula, but that it should be prevented from again enlarging; and this can only be done by a bandage and compress; but they should not be applied until repeated gushes of blood have reduced the circulation. In preventing the occurrence of hemorrhage, for which it has been advised, its use is very equivocal; for, amongst the poor where it is omitted the relative mortality from hemorrhage is probably less than among the rich. To restrain actual hemorrhage it is obviously insufficient; and, if it may have been applied, it must be removed, in order to ascertain the state of the uterus, and to adopt those manipulations by which the bleeding is effectually restrained.

The bandage alone may be applied over the abdomen, with moderate and equal pressure, in cases of syncope following rapid delivery, which is produced, as in tapping, from the sudden removal of pressure; and, in such circumstances, it should be applied immediately on the expulsion of the child. It may also be used to satisfy ladies who believe that it will preserve their form by preventing permanent distention of the abdomen, and to relieve uneasy sensations consequent on the relaxed condition of the abdominal muscles; but, in these cases, it need not be applied until the clothes have been changed, and the patient placed in bed, and sufficiently loose to allow the hand to pass easily between it and the belly.

The bandage and compresses often produce *injurious consequences*. Dr. Ley has known it force the uterus to one side of the abdomen, producing much uneasiness in the hip, stretching the ligaments and pressing the appendages of the uterus against the sharp lineæ ileo-pectineæ: hence laying the foundation of permanent obliquity of the uterus, not unfrequently a cause of barrenness. Another effect is to push the uterus lower into the cavity of the pelvis; thus producing prolapsus uteri, which Dr. Ley has more than once traced to this cause. Not only is the uterus pushed downwards, but the vagina is sometimes thrown into folds; the whole circumference descending until it forms a bulky tumour at the vulva. These evils are great, and not infrequent. Dr. Ley is also inclined to think that the bandage increases after-pains.—*Med. Gazette, September 10 and 17, 1836.*

## HYGIENE.

### OBSERVATIONS ON THE CONSTRUCTION AND USE OF THE RESPIRATOR.

BY JULIUS JEFFREYS. 1836.

The "respirator," it may be necessary to explain, is an instrument intended to warm the respired air as it passes through it, so as to prevent the injurious consequences to the lungs of breathing too cold an atmosphere. It must be obvious that the low temperature of the air during a great portion of the season in this country is one of the most fertile causes of pulmonary complaints; and

that any contrivance by which persons might have the benefit of fresh air and bodily exercise without the risk arising from cold is a great desideratum. It appears to us that this purpose is in great measure attainable by means of the instrument described in the pamphlet before us. The principle consists in interposing between the lungs and external atmosphere at the mouth, (or at the mouth and nose jointly,) a little apparatus, having metallic gauze so arranged that the air must pass through several folds of it, with minute distances intervening. The heat of the breath is abstracted on expiration, and retained by the apparatus as the air passes out, and is as readily yielded back to that which enters on inspiration; so that before the air reaches the lungs, even on a very cold day, it has already attained an agreeable temperature. The impression which the first description of such an apparatus communicates is, that it must be productive of a sense of closeness and confinement—impeding the respiration, interfering with the voice, and being productive of disagreeable moisture,—in fact, something like breathing through a piece of muslin.

The number of persons who may be seen on a cold day with their handkerchiefs at their mouths, sufficiently shows that some such contrivance as the "respirator" would be very acceptable to them. Now all the advantages they could desire, are professedly afforded by this little instrument. It is an ingenious, clever thing, and so far as we can judge, the principle appears to us excellently suited to its purpose. Two circumstances appear essential to the perfection of the instrument—that it should be sufficient to arrest the heat, and yet not calculated to impede the breathing. Both objects seem to be amply provided for in the "respirator" of Mr. Jeffreys: the wires nearest the mouth are one three hundredth part of an inch thick, and the same distance apart from each other; there are from eight to twenty layers of wire, and those most external are attenuated till they are no more than one six hundredth part of an inch in thickness. The following short extract will perhaps give a better idea of the principle:—

"Since the temperature of any one substance must be lower than that of any other before it can receive heat from the latter by conduction, it is plain that a single layer of metal could only take a part of the heat from the breath; even if the contact were of longer duration than it is, the breath would lose no heat after it had raised the metal up to its own temperature. In order to extract more heat from the breath, it must be carried through another layer of metal, which, being much colder than itself, can abstract heat from it. As the breath and this second layer approach towards the same temperature, this second layer will not be able to abstract more heat from the breath. It must, therefore, pass through a third still cooler layer, and, for the same reason, through several. In practice, six or eight will not prove too many; and in the coldest weather double that number may be employed. In this series of laminæ, each is warmer than the one in front of it, from the exterior one, which is nearly of the temperature of the atmosphere, to the innermost one, which is perhaps within ten or fifteen degrees of the temperature of the breath. These laminæ would not remain one instant of time at so different states as to heat, if they were placed in contact with each other. In order to preserve the progressive difference in their stocks of heat, they must be kept apart; and it will be found, that during the short period of one respiration, a very small separation will suffice for the purpose. An interval for each of one-fortieth of an inch, including the metal, is more than enough; six or eight layers may therefore lie in one-eighth of an inch. These layers having been warmed during an act of expiration, and being each warmer and warmer as they lie nearer the mouth, are enabled to give heat in the most advantageous manner to the fresh air entering from without, which takes up a parcel of heat in traversing each; since, although it grows more and more warm, it is sure to find every layer it comes to warmer than itself, which is, of course, a relative condition necessary for the communication of heat to the air."

The instrument costs two guineas (we believe,) and we recommend it to the attention of those who have delicate lungs. It may be fastened without difficulty by means of a ribband round the head, and would not be more remarkable than spectacles must have appeared when first introduced.—*Med. Gaz.*

## HOW TO MAKE STAYS.

"In our last number we noticed a very clever little book, by Mr. Coulson, on *Deformities of the Chest*. That book has arrived at a second edition, which lies at this instant before us. Amongst other things, it contains a chapter on stays, which is really both amusing and instructive. We would lay a bet that there is scarcely a surgeon in this country who knows the construction of the best modern stays. Yet they exercise a great influence on the figure—are of consequence in the treatment as well as prevention of deformities—and ought to be understood by all who may be called upon to treat such disorders. Mr. Coulson has seen things in the right light, and taken lessons in stay-making of Mrs. N. Geary, whom every body knows. Under these circumstances, it would be unpardonable, if we did not put our readers in the way of giving their fair patients a hint. \* \* \* \*

To proceed methodically:—There are, of course, three sorts of corset, 1. The corset for growing girls. 2. The demi-corset for the morning. 3. The complete corset. The pressure of the first is slight; being elastic in front, it yields to all the motions of the body, and when made with long and very elastic shoulder-straps, it allows perfect freedom of motion for exercise.

*Demi-corsets for the morning* are made about eight or ten inches in height, furnished here and there with light whalebones. In other respects, they are of the form of the upper part of the common corset; but the back edge ends in two long flaps, which are fastened in front by means of a tape. All this, however, is child's play. It is in the complete corset that the genius of Mrs. Geary has had full swing.

The problem to be solved was to support the figure, yet not to diminish freedom of motion—and to conceal the size of the abdomen, when too large.

'A little consideration of the shape will show that, in the back of the stays, extension throughout is chiefly wanted; in the front, extension throughout, and pressure inferiorly perhaps; and on the sides, extension throughout, slight pressure or support above, toward the bosom perhaps, and adaptation or pliability chiefly in the middle and below.

The extension throughout the back should be produced by two pliant whalebones, or, in some cases perhaps, by two thin steels.

The extension throughout the front, and the pressure, if necessary, to repress any prominence inferiorly, should be produced by a tempered steel of about an inch and a half wide, bent inward in a semicircular form, and sufficiently long to extend over the prominence.

The whole front, however, should be capable of expansion horizontally or laterally, by a portion of it, corresponding to the busk, placed over it, and like it extending from the top to the bottom of the front, being formed of numerous transverse elastica, while the lining behind the busk is divided longitudinally; so that this structure expands, in the transverse direction, with every flexure of the body.

Persons whose breasts are close may wear, inside the corset, at the upper extremity of the pocket of the busk, a piece of cotton wadding covered with white kid, to prevent the disagreeable chafing which the corners of the busk may produce: but it must be remembered that this adds to the thickness, and consequently to the pressure, and it should not, therefore, be unnecessarily or carelessly done. At the other end of the busk, may be placed a flat wadding.

The extension, support and pliability on the sides, may have somewhat varied means, according to the form of the individual.'

To support the breasts, the "gores" are made too short in general, and the bosom is eventually deformed, and marked with long white streaks. Now see what the talent of Mrs. Geary has done.

'With regard to these corsets, Mrs. N. Geary has introduced many remarkable reforms. They are now made lighter than they were lately; and the bosom is so formed as no longer to press injuriously upon the breast or to form a crease above it. The formation of the bosom, indeed, and of all parts adapted to prominences, in Mrs. N. Geary's stays, is a matter of great ingenuity, and

of extraordinary beauty. To this she was led by a desire to obviate the perpetual and just complaints made by ladies of the tightness across the chest, just below the bosom gores, in the common stays. To obviate these, she forms the whole stay of some nineteen or twenty longitudinal portions, or portions extending from the top to the bottom of the stays. Each of these constituent portions is wider above or below, than it is in the middle. By means of this gradually increasing width, the bosom and other prominent parts are formed. A moment's reflection will show that, by varying the width of any one or two of these portions, such stays become capable of adaptation to every possible variety of form; and that the bosom and all the prominent parts are thus formed without a single gore or gusset. Instead, therefore, of presenting sharp angles which cut in upon the sides, and which either tear the skin or are themselves torn up, these portions, supported by slender bones, or thin steels where necessary, curve gently and smoothly over every corresponding curve of the chest, and at once exhibit all the beauty of the most perfect form, and yield the most perfect comfort. With great propriety, also, the bones at the lower and lateral part of the stays are all thrown either before or behind the haunch, so that upon the side above the haunch, there is no bone to bend by the heat of the body, to form itself into an angle, and to excoriate the side, as in all other stays. Mrs. Geary's stays, constructed on these principles, are preservative at once of health and beauty, and are indispensable to dress, which gives a perfect idea of their advantages.—*Medico-Chirurgical Review.*

## MEDICAL STATISTICS.

### STATISTICS OF CALCULUS IN AUSTRIA.

The following tabular views are extracted from Von Wattmann's recent Treatise on Lithotripsy and Lithotomy, (*Ueber die Steinerbohrung und ihr Verfahren zum Blasenschnitte.* Wien, 1835. 8vo.) and are founded on official documents supplied by Professor Raimann, of Vienna.

#### I. Calculus Cases in the Austrian Dominions, from 1820 to 1830.

Provinces.	Whole Population.	Calculus Cases.
Vienna and Lower Austria, including the military,	1,206,520	49
On the Ems and Salzburg	835,043	18
Galitzia	4,316,086	19
Moravia	2,046,787	39
Bohemia	3,582,150	106
The Tyrol	780,399	11
Styria	854,720	10
Illyria and Maritime States	1,154,885	31
Venice and the Eight Provinces	2,032,339	278
Milan and Lombardy	2,400,000	794
Dalmatia	383,600	49
Total	19,592,529	1,449

Proportion, one case in 13,531 of the population.

#### II. Cases of Lithotomy in the Surgical Clinic of Vienna, during thirty-five years.

Age of the Patients.	No. operated on.	Deaths.
From 1 year to 10	71	7
— 11 — 20	42	3
— 21 — 30	30	9
— 31 — 40	12	3
— 41 — 50	6	3
— 51 — 60	11	6
— 61 — 68	8	3
Total	180	34

All the patients admitted, except four, were operated on. The above table gives the following results :

Proportion of deaths to the whole operations 1 in 5 1-4.  
in children 1 11 3-10.  
between the ages of 20 and 30, 1 3 8-11.  
— 50 and 60, 1 2 1-11.

Of the thirty-four deaths, the following are given as the causes :—Gangrene of the bladder, 6; Phthisis, or hectic fever, 5; Debility, 6; Exhaustion from Suppuration, 3; Nervous shock, 3; Typhus, 6; Convulsions, 1; Suppuration of the Kidneys, 1; Cholera, 1.

### III. General Chemical Constitution of the Calculi in the Vienna Collections.

Nature of the Calculus.	In the Pathological Museum.	In the University Museum.	In the Joseph Museum.	In V. Kern's Collection.	In Wattmann's Collection.	Total.
Phosphatic	32	26	27	28	26	139
Oxalic acid, with phosphatic envelope	3	16	5	8	8	40
Oxalate of lime	4	12	3	1	7	27
Oxalic acid, with uric acid envelope	9	3		3	5	20
Uric acid	11	9	10	10	11	51
Number of patients and calculi	59	66	45	50	57	277

*Schmidt's Jahrbücher der Gesamten Medicin*, B. x. H. 3, No. 5, 1836.

### MEDICO-STATISTICAL REPORT OF THE DEAF AND DUMB IN THE DUTCHY OF BRUNSWICK, IN THE YEAR 1835.

BY DR. MANSFELD.

(1.) The whole population of the dutchy, 253,232; the total number of deaf and dumb, 125; consequently, the proportion is 1 in 2,026. (2.) Of the 125, 60 are males, and 65 females. (3.) In Prussia, the proportion of deaf and dumb to the population is 1 in 1,426. (4.) Nearly the fourth part of the whole number had one or two brothers or sisters similarly affected. (5.) For the most part, these persons belong to the middle and lower classes; their parents being generally poor. (6.) The health of these persons is in general good; those residing in the vicinity of the Harz are said to be scrofulous, and five of the whole number are idiotic. In two cases only could the deaf-dumbness be traced to distinct causes; viz. one as the consequence of fright, the other of miliary fever. (7.) Almost all the deaf-dumb in the dutchy have the benefit of education: a circumstance very creditable to the country, and which the author, with a just pride, contrasts with the great neglect of the same class of persons in Austria, in which vast empire it appears that, out of 20,639 individuals labouring under this infirmity, only 400 are placed in houses of instruction, (teh in number;) all the rest being left without assistance. When it is considered that, of this number, the fifth part at least are susceptible of instruction, there is evidently here a great neglect of the duties of humanity. (8.) With the exception of those who are yet too young to work, or who are mentally incapable of gaining their livelihood, or are supported by relatives, (57 in all,) or who are in the course of instruction, (number not mentioned,) all the others are gaining their own livelihood as artisans and labourers. (9.) Dr. Mansfeld calls the particular attention of teachers to the fact, that, in many cases, the inability to acquire the sound of particular letters or words depends on physical defects of the organs.

of speech, and not on mental incapacity. In proof of this he instances nine cases among the children at this time in the Brunswick Institution, who labour under some defect of this kind. The defects mentioned are the following:—Imperfect uvula; thick tongue, without frænum; large tongue, long and irregular uvula; tongue deficient in muscularity; tubular palate, imperfect uvula; enlarged tonsils; flat and irregular palate; general defective size of mouth, large tonsils; imperfectly developed larynx.—*Hannoversche Annalen*, B. i. H. 4. October, 1836.

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*Illustrations of Pulmonary Consumption, its Anatomical Characters, Causes, Symptoms, and Treatment.* To which are added, some Remarks on the Climate of the United States, the West Indies, &c.: with thirteen Plates, drawn and coloured from nature.—Second Edition.—By SAMUEL GEORGE MORTON, M. D. Late Physician to the Philadelphia Alms-house, Member of the American Philosophical Society, and of the Academy of Natural Sciences, &c. &c. &c. Philadelphia. Edward C. Biddle. 1837. 8vo. pp. 349.

THE work of Dr. Morton, on Pulmonary Consumption is characterised by, 1. A well written description of the organic changes of the lungs which usually coexist with this disease; and numerous well executed pictorial representations of the morbid structure thus described. 2. A clear and succinct statement of its causes and symptoms, and the physical signs derived from percussion and auscultation. 3. An inquiry into the influence of climate as a preventive and curative of phthisis. Collateral with the main points are those on the complications of consumption with other diseases, and on those which systematic writers have regarded as species and varieties. The author has adhered to the promise held forth in the title of his work. He gives us "Illustrations," precise without being formal or didactic. He neither trumpets forth, in advance, a boast of any discovery peculiar to himself, respecting the nature or cure of consumption, nor does he move along on stilts and impose on us a turgid style and involved description for ideas of deep meaning and oracular import. But, whilst he follows in the path of investigation, in which a Laennec, a Louis, and a Bayle have so successfully led, he is not a mere copyist or compiler of the facts and opinions of others; his own wanting or unformed. His cases and illustrations in general, both of cause, morbid change, and cure, are American, indigenous, and practical.

Into a detail of the features of this work, and a review of it either analytical or critical, we shall not now engage. Respecting the first, we have just mentioned the characteristic ones; and the latter, with whatever patience and care given could not convey to the reader, we will not say a tolerable idea of its pages, but that copious and connected knowledge of the subject which he ought to obtain by a careful perusal of the work itself. It should be added, that he will not have to summon all his determination to discharge a duty under the repelling influences of miserable typography, dirty white paper, and (unintentionally) caricature illustrative drawings, by which so many of the works sent

forth from the American press are disfigured. In the present instance, all the arts of lithographic drawing, and of colouring, and printing on good paper, and binding, have been enlisted by the liberal publisher, Mr. Biddle, to give effect to the ability and industry of the author. To such an alliance, every liberal mind, and certainly every member of our profession which has been emphatically termed liberal, must wish entire success.

In whatever manner the subject of pulmonary consumption is introduced to one's notice, it is impossible not to experience a feeling of distress at its extensive and continued ravages, and mortification at our inability to cure it, when once in progress. We would not be thought for a moment to undervalue a knowledge of the diagnostic signs and characters of the disease, and of all the means hitherto suggested, and partially successful, to alleviate the pain and distress by which it is accompanied. But we would urge on all zealous searchers after truth, all philosophical observers of vital phenomena, the paramount importance of determining the extent, and duration, and the nature and reach of the causes by which this dread malady is induced. The object of more enlarged knowledge in ethics, not less than in physiology and hygiene, as it certainly ought to be the aim of those who cultivate these branches, is to establish rules for prevention of moral ill by the first, and of physical suffering and disease by the two latter. The secondary causes of consumption, such as bronchitis, pneumonia, pleurisy, mechanical employments, and atmospherical influences, are, relatively, of small importance when compared with the primary one vaguely termed predisposition, but which we should inquire into and study with a view to determine the precise nature of that depraved nutritive and organic growth, which more than disorganization gives the terrific peculiarity to the disease in question. The circumstances under which the internal changes, constituting nutrition and secretion and termed by some organic or vital chemistry, take place, are now beginning to be better understood. The relative and never ceasing mutually reciprocal influence of fluid and solid, are, also, of general admission. The modification exerted on both solids and fluids of an animal by the food which it uses, the soil of the region in which it lives, and its tendency to morbid growths and changes by these agencies, are facts of frequent observation and not unusually careful record. These might be made to illustrate our inquiry into the effects on man of not only the above-mentioned, but of the whole range of hygienic influences. The investigation, to be sufficiently comprehensive, should embrace as well a comparison of their effects on the inhabitants of different climates, as of the different races and nations of mankind; and of the effects produced, in the same region, on two different races and nations; determining how much is due to climate, and how much to the food in general and habitual use. In the same region, the state of the functions and the tendency to, and actual existence of, organic changes and morbid growths and degenerations in the lungs and other organs, should be noted in the different periods of life of the inhabitants; and afterwards the condition, in these respects, of persons at a particular age in one region, compared with those of the same age in another region and in a different climate. Taking up the several points in succession of exposure of person and irregularity, insufficiency, or depravation of food, and comparing the results in a savage with those in a civilized state, an approximation might be made to the reality of the nature and extent



to which civilization and luxury, with extreme and unequal bodily and mental efforts predispose to pulmonary consumption.

The causes in succession, and separately and in connexion carefully noted and appreciated, in the large and philosophical mode of investigation above recommended, not only could prevention be more explicitly pointed out, but antidotal and curative treatment indicated to remove the effects of morbid agency and change in the pulmonary organs. We might then be able to determine how far and how long an individual, with disorder of the lungs indicating consumption, could tolerate the morbid influences to which he is exposed without fatal result; just as we now do in the case of a person suffering under the operation of the causes of intermittent fever, rheumatism, &c. The subject of predisposition so vaguely and indiscriminately spoken of, would then receive its true value and application, because the several elements which combined make it a complex problem would be demonstrated and their nature determined.

We shall conclude these remarks by quoting what Dr. Latham says, respecting the curableness of consumption.\*

"All the world is asking us whether Consumption be curable? Indeed all the world is interested in the question: for there is hardly a family into which Consumption, sooner or later, does not enter; and when a man makes the inquiry (as it were) speculatively, or indifferently, he has most likely a real practical interest in it at home. He says, 'Is Consumption a curable disease?' But he *would* say, 'I have a wife or a child, a brother or a sister, who is decidedly consumptive; is there the least possible hope left me that they can recover?'

"To the question proposed with *such intent*, it is a mockery to answer 'Consumption is a curable disease;' because, forsooth, its entire process from beginning to end—its formation, progress, cure—may be *secretly* transacted within the body without our knowing or suspecting any thing about it.

"If you ask me, as a Physician, whether I have ever had experience of a perfect and satisfactory recovery taking place, where there have been all the best known *popular* symptoms of Phthisis decidedly marked, symptoms which (*as far as they go*) no physician could possibly say were not those of Phthisis? I answer, 'Often.'

"But if you ask me whether I have ever had experience of the like perfect and satisfactory recovery where there were all these popular symptoms, and, withal, the conditions proper to phthisis, ascertained by auscultatory signs to exist beyond a doubt within the lungs? I answer, 'Hitherto never.'

"What shall we say then? How shall we answer the popular question in the popular sense, and still answer it truly? We *cannot* say that consumption is curable; but we *can* say (and truly) that there are cases of *imputed* consumption which put on such an aspect of the *real* disease that they are with difficulty distinguished from it, yet have not its essence. These are all within the possibility of cure.

"We *can* say that there are cases essentially phthisical, in which the disease is so lingering in a particular stage, that many years are often required to bring it to its fatal termination. The decline is gradual, almost imperceptible, but sure. These fall within my first description.

"And we can say that there are cases essentially phthisical (and these fall under my second description) in which the disease accomplishes its course, as it were, by parts and parcels; many times apparently beginning, and many times apparently ending, but always (as far as I see) beginning again: a year or two of disease, a year or two of health, then a year or two of disease again. Yet, upon these terms, I have known those who have passed neither a short,

\* Lectures on Subjects connected with Clinical Medicine.. We intend to introduce this popular and instructive work into the Library for this year.

nor a useless, nor an unhappy life. I have known those who have so gathered up the fragments of their broken health as to make them serve for high and useful purposes, and put to shame the fewer and smaller performances of stronger men."

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*Discoveries in Light and Vision, with a short Memoir, containing Discoveries in the Mental Faculties.* New York. G. & C. Carvill & Co. 1836. pp. 300. 18mo., with Diagrams.

THIS little work on scientific subjects, is dedicated, indirectly, to a poet. In this we see but an evidence of the author's regard for a friend, and not any proof, even by implication, that the views and experiments contained in it, are at all within the domain of imagination or opposed to the laws of rigid induction. There is so much vigour and fearless independence in the annunciation of truths, or at least of what is believed to be truths, and such a decided denunciation of errors, real or attributed, that one cannot but admire the spirit, whatever we may think of the science of the author, in the volume before us.

Among the points denied, and controverted by experiments in this work, are the inverted image of objects pictured on the retina, and that this latter is the seat of vision. Among the articles of faith are, 1. That the cerebral ganglion, on which the optic nerve rests is the seat of vision; 2. That *latent light* is disengaged through the excitement of the *fibrous* (internal) terminations of the optic nerve, when we have a desire to recal the form of an object once perceived. 3. That we can see the retinas of our own eyes.

These two last positions reminds us of Milton's beautiful invocation to light—in which he calls it "bright effluence of bright essence increate," and after bemoaning his hard fate in having "wisdom at one entrance quite shut out," adds,—

"So much the rather thou celestial Light  
Shine inward, and the mind through all her powers  
Irradiate,—there plant eyes, all mist from thence  
Purge and disperse, that I may see and tell  
Of things invisible to mortal sight."

We should do injustice to the views advanced, were we to give but a few extracts, and then stop short of the declarations and illustrations, by experiment and argument, in their favour. We must, for the present, content ourselves with recommending the work for perusal, to all inquirers into physiology and mental phenomena. If they do not meet with quite so much novelty as is intimated by the author, they will find fully enough to prompt them to a careful review of older and generally received opinions, and, perchance, to a profitable modification of these latter. And if their early faith in certain scientific matters be not shaken, they will at least acquire such strength and resources in their examination as to render them believers with more knowledge, and a clearer understanding than heretofore.

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#### EPIDEMICS OF THE MIDDLE AGES.

THE three volumes of Hecker, the first of which or that on the "Black Death," is introduced into the present number of the Library, convey, together

with valuable historical information, an additional picture of human nature, and a very clear moral lesson. In all its aspects, the history of an epidemic is valuable and instructive to the physician, whether we regard its precursors, its nature, the mortality induced by it, the state of the public mind before its approach and during its continuance, the alarm and the panic to which it gives rise, and the prejudices and cruelties induced by popular prejudice respecting its cause. It is not very encouraging to the optimist to see, that the disgraceful and cruel excesses into which the people were led by their belief of the great epidemic of the fourteenth century being caused by the poisoning of the wells, should find a parallel in the scenes enacted in different places on the occasion of the appearance of the cholera in the nineteenth century. Ignorance, cruelty, credulity, and panic among the people, persistence in old errors by their rulers, and a belief among physicians of the necessity of obtaining peculiar specific remedies to overcome an alleged peculiar disease, have been, if less general, as distinctly marked in our day as they were nearly five centuries ago.

Still more curious than the "Black Death" of the fourteenth century, is the "Dancing Mania," which soon followed; and which was continued in various parts of Europe during the next century. The history and description of this latter, being the second volume of Hecker, will find place in the next or ninth number of the Library. The third and last, which has not reached us, as it has not been yet published in England, is on the "Sweating Sickness." This will probably not come in time for the present year; but will appear in the next one of the Library.

#### TRANSYLVANIA UNIVERSITY.

We refrain from introducing to the notice of our readers the unfortunate disputes amongst the professors of the medical faculty, and between some of these and the trustees of the institution. Regarding the affair as a family quarrel, the precise nature of which, and the merits of the parties to it, we cannot at this distance, and with the warm *ex-parte* statements and denunciations sent to us, form a correct opinion, we shall wait until we can announce positive and official results.

#### UNIVERSITY OF MARYLAND.

The resignations of Drs. *Geddings* and *Smith* have produced a dislocation in the Medical Department of the Maryland University which will not be readily rectified.

#### OBITUARY.

Died at New York, on the 17th of May, of consumption, **GEORGE MACARTNEY BUSCHE, M. D.** in the thirty-ninth year of his age. Dr. Busche was born near Antrim in Ireland, and had been a resident of New York about nine years. He had acquired great reputation as a scientific and practical surgeon,—and we believe his place will not easily be filled. We understand that his Papers and Correspondence have been placed in the hands of Dr. G. S. Bedford of New York, to be published for the benefit of his family. The public may expect to have a faithful biography of this eminent surgeon, as well as a highly interesting and valuable work.

# THE ECLECTIC JOURNAL OF MEDICINE.

EDITED BY JOHN BELL, M.D.

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MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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## REMARKS ON THE PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF COLCHICUM.

BY ROBERT LEWINS, M. D., Fellow of the Royal College of Physicians Edinburgh, &c. &c.

MEN who really think for themselves know full well, that the trials of new remedies which are made by the profession at large are so superficial and inconclusive, as to be not worthy of the slightest attention when the value of such remedies are under discussion.—*Haden*.

Notwithstanding the strong recommendation of Baron Stoerck of Vienna, and the observations of Magendie, of the late Mr. Haden and others, a great proportion of the medical profession in Great Britain, and I believe on the continent, are ignorant of the medicinal virtue of colchicum, or at least underrate its efficacy, whilst many decry it as a drug of doubtful and dangerous character.

Two circumstances appear to me to have retarded the introduction of this agent into general use. It is one possessed of very active properties, and requires not only caution in its administration, but unwearied industry in watching its effects. He who prescribes colchicum must not merely order a certain quantity to be taken, and then leave his patient to his fate. The effect of every dose should be watched, and it must be increased or diminished, so as to secure the full effect of the medicine without the injurious consequence of an over dose.

There is another cause which has contributed to increase the prejudice against colchicum. It is generally allowed that the active principle of the French nostrum, the *eau medicinale d'Husson*, so celebrated some years ago, for the cure of gout, is the same on which the medicinal virtue of colchicum depends, and the former medicine has been, I think, improperly banished from British practice, as one dangerous and often fatal to those for whom it is prescribed.

A knowledge and recollection of the extraordinary physiological and therapeutical properties of the *eau medicinale*, and a belief that it and the colchicum owe their medicinal virtue to the same vegetable principle, induced me to think favourably of the latter medicine, and to investigate its effects; an investigation, which, step by step, led to the conclusion which I am desirous of communicating to my professional brethren.

Various preparations of *colchicum autumnale*, or of plants which the researches

of modern chemists have proved to contain the same vegetable principle (*veratria*) have been recommended by physicians in all ages. Pliny appears to have been acquainted with the anti-arthritic virtues of hellebore,—and he enumerates epilepsy, hydrophobia, insanity, and the lousy disease, amongst the maladies which that medicine is capable of curing. Hippocrates has left as to the use and action of hellebore the following aphoristic rules; which it behoves us to keep in mind, and to consider whether or not they are applicable to modern medical practice, when *veratria* in any shape is administered.

“Ubi biberit quis elleborum, ad motiones quidem corporum magis ducit: ad somnos verò, et quietem, minus. Declarat autem etiam navigatio, quod motus turbat corpora. Quando vis magis ducere elleborum, moveto corpus: quando vero cessare, somnum facito et non moveto. Elleborus periculosus est sanas carnes habentibus: convulsionem enim inducit. Convulsio ab elleboro, lethale.”

From what I have observed, I would conclude that there is most risk of danger from the violent action of any plant containing *veratrine*, in debilitated constitutions, particularly in individuals whose digestive organs are weakened by intemperance. When it really does mischief, it is not by occasioning convulsions, but by giving rise to inflammation in the bowels, or producing diarrhœa, or in fact cholera. Hippocrates here appears to use the word convulsion in a different sense from us.

*Veratria* was the active medical agent in a favourite anti-arthritic remedy of Paracelsus; and it formed the active ingredient in most or all of the prescriptions of the regular practitioners, and empirics of the last century, famous for the cure of gout, as will be seen by the following quotation from Quincy's Dispensatory, published in 1749.

“Radices, roots of,

“*Hermodyctyli*. *Hermodyctyls*, Casp. Bauhine calls this *colchicum radice niccata alba*, which is the meadow saffron; but many dispute whether it be of this kind or not; some taking it to be a species of the *Dens caninus*, others of the *Iris tuberosa*, amongst whom is Mathiolus; and others of the *cyclamen*. However this stands so much in the esteem of some writers, as to be dignified with the name of *Anima Articulorum*, the soul of the joints; because they believed it to be very efficacious in scouring the mucilaginous glands, and preserving them from such gritty matter as occasions the gout and arthritic complaints. This is of that kind of cathartics which exert not themselves but in the smallest passages; and therefore are slow in their operation, although of great consequence in their effects. The Augustan Dispensatory has a compound pill that takes its name from it, and it is a principal ingredient in the *pulvis arthriticus Turneri*, as likewise in some recipes of the *extractum radicum*, and other official composition of the like intentions.”

I have advantageously prescribed *colchicum* in its mildest form, that of an acetate, for upwards of nine years past, particularly in diseases of the heart, the result of which in such cases, I shall communicate upon a future occasion. At present I wish to speak of the effect of its more active preparation in acute diseases.

Observing the power which *colchicum* possessed of diminishing irritability in internal organs, and keeping in mind the wonderful effects of the *cau medicinale* in gout, it occurred to me that *colchicum* might be advantageously used in all or in many inflammatory diseases,—in fact, in all diseases where excessive excitement, whether of the nervous or sanguiferous system prevailed,\*—an idea

\* *Colchicum* will also be found to be a powerful anthelmintic. I have given it with benefit in jaundice, and would strenuously recommend a trial of this medicine in croup, prescribed in such a manner as speedily to bring the system under its powerful influence. In all inflammatory affections of the chest, and perhaps of the brain, or its investing membranes, I am convinced bleeding may frequently be, to a certain extent, superseded by the use of *colchicum*. In many diseases of the heart and large arteries, it is a most valuable medicine, as I shall endeavour to prove in a subsequent communication.

which I subsequently found had been to a certain extent entertained by Mr. Haden, Mr. Want and others. A great proportion of the medical profession, nevertheless, have never even used this article of the *Materia Medica* in any disease; and many of those to whom we are with propriety accustomed to look with respect in medical matters, are still not only ignorant of its properties, but of the quantities which can be given with safety or advantage. Of this we have an extraordinary proof in the London and Dublin Pharmacopœias, where, in speaking of the dose of the wine of the roots, and the tincture of the seeds, the former directs from one to two drachms, and the latter half an ounce, to be given for a dose. It is almost superfluous to remark that the latter dose, if it did not prove speedily fatal, would produce the most deleterious effects by its irritation on the intestinal mucous membrane, and the consequent prostration of the nervous system, in nineteen persons out of twenty, who may be so unfortunate as to have their medical attendants guided in this respect by the Dublin Pharmacopœia.

It may appear strange, but it is not less true, that in the present state of medical science, the profession as a body should be ignorant even of the proper dose of a medicine which, in one form or other, has been used in all ages. This circumstance, no doubt, arises, as far as the wine of the root is concerned, from its being prepared from the root taken out of the ground at an improper season; hence we may have a drug possessed of most active properties, or, it may be, almost totally inert. Fluid preparations of meadow saffron should always be made from the seeds of the plant, which will secure a preparation of uniform strength and activity. To the vinous tincture of the seeds of *colchicum* alone are my present observations applicable.

Before venturing to use this powerful medicinal agent freely, I instituted a series of experiments to regulate my practice\* as to the extent to which the dose might with safety be increased, of which the following is a narrative.

It may, however, be premised, that I had frequently taken from 40 to 65 or 75 drops myself without any sensible effect, except a feeling of temporary depression of strength.

Case 1. R. L. aged 18, student of medicine, when labouring under slight sore throat, took 50 drops of *Vin. Colch.* at nine A. M.—at half past twelve no effect had been produced, and he took 30 drops more. At a quarter before eight P. M. when scarcely any sensible effect had ensued, he took an additional dose of 20 drops. Quarter past eleven P. M. only a slight degree of nausea. 100 drops had thus been taken before bed-time in the course of twelve hours with almost no sensible effect. He went to bed about midnight; slept well; and awoke about six o'clock next morning. At half past eight, 60 drops more were taken. He breakfasted soon afterwards, sparingly, appetite being somewhat impaired. At half past nine a sudden call to stool was followed by a very copious alvine evacuation, with considerable griping pain; and about a quarter of an hour afterwards he experienced in the large intestines a feeling of great commotion, which was immediately followed by six very copious watery evacuations of a yellow colour.

In this case, in which 160 drops were taken in the course of twenty-four hours, a slight degree of nausea only was experienced during the first twelve hours, and the sleep was undisturbed. After the dose of 60 drops on the following morning considerable nausea was felt, but no vomiting took place. The bowels, as has been already mentioned, were freely moved seven times in the course of the day; the appetite was impaired, and a feeling of weakness continued for twenty-four or forty-eight hours.

Case 2. W. F. student of medicine, aged 17, when in perfect health took at seven o'clock A. M. 70 drops of the vinous tincture of the seeds of meadow saffron. Not being in any way affected by this dose, he swallowed, at half past ten, 30 drops more. About half past eleven he felt slight sickness, but at half past twelve took an additional dose of 30 drops of the *colchicum* wine. Sick-

\* I had frequently heard of very violent effects being produced by the abovementioned medicine; and it is well known that a dose of two drachms proved fatal to a patient in a public hospital lately.

ness increased, but neither vomiting nor purging supervening, in three hours afterwards he took 40 drops more, making 170 drops in nine hours. About two hours after the last dose severe sickness occurred, followed by a copious alvine evacuation. At nine o'clock p. m. he had another call to stool. He slept well; but on awaking next morning felt still sick and faint; had four alvine evacuations in the course of the day, watery and of a yellow colour. A little after 8 a. m. vomited upwards of a quart of thick whitish matter, felt some desire for food, but was unable to eat. At eleven a. m. vomited a quantity of viscid greenish matter; soon afterwards vomited again. At three o'clock rejected some brandy and water which had been taken. At four vomited again.

Next morning felt rather sick, and no inclination to eat. Sickness gradually subsided in the course of the day.

In this case, in which 170 drops of the *Vin. Colch.* were taken in the course of nine hours, it produced, with considerable nausea and much vomiting, six copious alvine very watery evacuations without pain. The urine was of a deeper colour than usual, and deposited a sediment. Little effect appeared to be produced upon the pulse.

Case 3. J. L. aged 15, took 40 drops of *Vin. Colch.* for the first time at nine a. m. No sensible effect having ensued, he took at twelve another dose of 30 drops. Two hours and a half after it had been taken he felt rather squeamish. At four p. m. he took 30 drops more, and about a quarter of an hour afterwards was still more sick. 100 drops had been taken in the course of seven hours without producing either purging or vomiting. At seven p. m. 30 drops more swallowed; severe sickness was experienced soon afterwards. About ten p. m. he vomited three different times. Shortly after he took a little food, which was immediately rejected. In the course of ten hours he took 130 drops; vomited four times, and bowels were moved only once. Slept well; next morning felt sick, and had no appetite. In the course of the day, however, the sickness subsided, and at the usual hour of dinner he was in every respect quite well.

Case 4. F. L. aged 12, at half past nine a. m. took 30 drops of *Vin. Colch.* Little sensible effect was produced throughout the day. At 5 p. m. took 30 more; dined immediately afterwards with his usual appetite; walked from Leith to Newhaven and back in the evening, a distance of about three miles. At eight o'clock p. m. felt sick, and vomited half an hour afterwards, very copiously, and easily. He had a desire to eat immediately afterwards, and took an egg, which he enjoyed; fell asleep soon afterwards, and enjoyed a night of undisturbed repose. A quarter of an hour before seven of the following morning (ten hours after the first dose) he had a copious alvine evacuation, and a second soon afterwards. Before evening nine watery stools ensued, without any pain from the action of the medicine.

Case 5. J. B. aged 17, in perfect health took 40 drops of *Vin. Colch.* at eight o'clock at night. No sensible effect followed the dose, and at eight the following morning, took 30 drops more; slight sickness in the forenoon, but no other effect; about three p. m. 30 drops were taken. The bowels were moved at six o'clock for the first time. In the course of the evening slight vomiting occurred several times, and he fainted once after a copious alvine evacuation, but soon recovered, and was cheerful immediately afterwards. The bowels were moved five times before bed time; he slept well; and though he felt little inclination for breakfast at the usual hour next morning, he became hungry at midday.

At a subsequent period, some ten days afterwards, having taken 70 drops at six p. m. he became sick in the night. At one o'clock a. m. was very sick, and vomited bile; continued to experience much nausea, and to vomit occasionally until four o'clock p. m. Upwards of a pint of bile was ejected from the stomach between one and nine o'clock a. m. He had headache in the course of the day; at dinner eat little; just able to taste tea at seven p. m. Next morning he was nearly well, and able to go out at noon, being perfectly free from every uncomfortable feeling. Pulse during the first twenty-four or thirty hours was feeble and below the natural standard; it afterwards rose to 100, and continued so for twenty-four hours, but there was no symptoms of illness except a feeling of debility.

Case 6. R. B. aged 10, at ten o'clock a. m. took 20 drops of *Vin. Colch.*; no

sensible effect followed, and at half past four took a second dose of 15 drops. No sensible effect from that quantity during the day. Next morning two motions too place, but without sickness or nausea. At half past eleven A. M. took 25 drops, and at half past four 20 more. No effect whatever was produced until about an hour after the latter dose, when the bowels were moved, and twice afterwards, between six and seven o'clock, at which time he also vomited. Sickness and vomiting not very violently continued all evening. In the night he vomited twice (viscid bile) and had three additional motions in the bowels; in all nine operations. The sickness continued from seven the first evening until ten o'clock next forenoon (about fifteen hours). Slept pretty well, although frequently sick and awake in the night. Little desire for food until the following day, since which time he has been free from sickness, but not inclined to get out of bed; took some coffee at twelve. The pulse, whilst the nausea continued, was feeble and less frequent than natural. Eighty drops were taken in the course of twenty-nine hours and a half.

Satisfied by the above experiments as to the extent to which the *Vinum Colchici* might be safely administered within a given period, I prescribed it in six cases of fever successively.

Case 1. A. S. maid-servant, aged 36. Sunday, April 10th. Complaints of loss of strength, headache and pain in the back; tongue furred; pulse 100; no appetite; thirst urgent; slight delirium. The complaints were of seven days' standing; was cold and shivered at first; confined to bed since Thursday last. Took a dose of salts on that day, since which time the bowels have not been moved. Catamenia regular. Thirty drops of colchicum wine were directed to be taken every three hours; but if it occasioned vomiting or purging, the dose to be reduced to one half, and the interval doubled.

Monday, April 11, A. M. Vomited rather violently after the first and second doses of thirty drops, since which only fifteen drops have been given every six hours. Bowels moved twice; stools bilious. At four o'clock in the morning began to perspire profusely, when the headache left her, and she has continued free from it all day. Skin still very moist; pulse 89; tongue moist, and much cleaner. The wine was continued at the rate of ten drops every three hours. Tuesday, April 12. Slight vomiting and frequent loose bilious-looking stools since yesterday. No headache; pulse 88; tongue clean and moist. The meadow saffron wine was continued.

April 13. Desire for food returned yesterday afternoon. Eat some potatoes, which were soon afterwards rejected by vomiting; headache returned and continued for several hours, last night; belly continues open; stools watery, and of a greenish colour; pulse 84; tongue clean.—The colchicum wine was continued.

April 14. Still distressed with headache.—The colchicum wine was continued.

April 16. Has taken the medicine in small doses, from five to ten drops once in three or four hours. Belly open; pulse 84; tongue clean; perspires occasionally; headache gone. The wine was continued in doses, according to its effect on the stomach and bowels.

April 17. Slept well; bowels open; pulse 84; tongue clean; nausea subsiding.—The wine was continued.

April 18. During the last forty-eight hours she took the colchicum wine as directed, and used altogether half an ounce in the course of a week, but no other medicine. Free from every complaint except weakness; appetite good; pulse 76; tongue clean. To have mild nourishing diet.

April 20. Continues convalescent, but complains of great weakness. She was now directed to take, three times a day, a wine-glassful of infusion of quassia with dilute sulphuric acid.

April 25. Free from complaint.

Case 2.—A. Macgregor, maid-servant, aged 23.

April 24. Was taken ill this morning with symptoms of fever, shivering, headache, and prostration of strength; still cold. (Midday) pulse 80; had vomited several times; tongue dry and brown; catamenia regular.—Fifty drops



of colchicum wine were ordered to be taken immediately, and thirty drops every three hours afterwards, until it acted on the stomach or bowels.

9 P. M. Has taken 130 drops without producing vomiting or purging, but feels sick; headache still violent; pulse 115. The colchicum wine was continued at the rate of thirty drops every three hours.

April 25, 11 A. M. Has taken 280 drops since yesterday at 1 P. M. At ten o'clock last night began to vomit, since which time she has vomited repeatedly green viscid bile, (in quantity half a hand-basin-full;) bowels moved twice; appearance of evacuations not examined; headache relieved; pulse 66; tongue clean and red; feels weak, and complains of great pain in her back; countenance greatly improved. The wine was continued at the rate of fifteen drops every three hours.

April 26. 4 P. M. Has vomited much during the forenoon; complains of great sickness, but headache almost gone; pulse 72; tongue cleaner; bowels open.—The colchicum wine was intermitted.

April 27. Headache quite gone; feels well; pulse 100; face florid, as usual; tongue clean; bowels moved once to-day. *Int. medic. omnia.* Has taken in all 335 drops of the *Vinum Colchici* in the course of three days.

April 28. So well as to be able to leave her master's house, on foot at nine o'clock last night, to go to her mother's; slept well; pulse 84; tongue clean; headache and pain in her back quite gone, but feels weak; bowels not moved to-day.

April 29. Feels much better; sickness quite gone; has gained strength; no pain in her head or in any part of her body; slept perfectly sound; tongue clean; bowels not moved either yesterday or to-day; pulse 80. She was directed to take an ounce of castor oil.

Without the use of any other remedy she was able to return to her usual duty as house-maid, in the course of five or six days, but at that period was still weak. She was directed to take, three times a-day, a wine-glassful of infusion of quassia and dilute sulphuric acid.

Case 3.—Mrs. W. aged 57.

May 7. 10 P. M. Has been subject to attacks of palpitation, for which, in the course of the last six months, she has taken colchicum, principally in its mildest form, an extract of the acetate, but not lately. Had a slight attack of palpitation yesterday, which, however, did not last long. To-day was affected with violent headache, and complains of general weakness, pain in the back and excessive thirst; tongue very dry but not furred; pulse 100, and full; the bowels had been moved three times to-day, from a dose of *supertart. potass.* which she had taken before I saw her. The legs and feet were ordered to be bathed in warm water.

May 8. On getting out of bed last night, she had a smart shivering fit. Slept little, and perspired slightly in the night; headache continues; feels very weak; great pain in the back and loins; no appetite; thirst excessive; tongue very dry; pulse 100 and full; respiration hurried; bowels not moved to-day.—*Habeat Vin. Colch. ℥ss. cujus gtt. xl. sumat quam primum et gtt. xxx. quaque hora tertia donec supervenerit vomitus vel catharsis.*

10 P. M. Has taken 100 drops of the *Vin. Colch.*; feels very weak, eructates violently and very frequently; has vomited two or three times; headache relieved; pulse 96, and weaker; pain in the back diminished; tongue slightly moist; perspiring a little.—*Cont. Vin. Colch.*

Monday, 8 o'clock A. M. Has been very sick all night, and vomited frequently; bowels moved four times; stools watery, with masses of seculent matter floating therein. The matter vomited has the appearance of bile mixed with mucus. The dejections and matter vomited fill an ordinary chamber-pot. Pulse 98, and still less full; tongue improved in appearance. The medicines were stopped, and mild farinaceous food of any kind was allowed.

May 9. 4 P. M. Slept tolerably well last night; has been very sick all day; vomited a considerable quantity of bilious matter; bowels moved four times since yesterday; evacuations watery and rice-looking; pulse 100; tongue drier than at last visit, with a white fur round the edges. VS. b. ad ℥x.

9. P. M. Blood slightly buffy; has been easier since last visit; vomited only once, and that after taking tea; bowels once moved since four o'clock; pulse 76; perspiring freely; tongue moist. On the morning of the 10th she was greatly relieved; pulse 76; tongue moist; no vomiting or purging; has taken some arrow root.

10. P. M. Does not feel so well as in the morning; complains of pain in the back and restlessness; pulse 96; no vomiting or purging.

R. *Haust. Anodyn.* c. gtts. xx. *Acet. Opii.* c. h. s.

Wednesday, May 11, *mane*. Has had a good night; pulse 90; tongue clean in the middle, but covered with white fur on the sides.—*Int. Medic. omnia*; farinaceous diet to be continued.

10 P. M. To-day there has been occasionally slight delirium; pulse 90; tongue clean in the centre, and moist, but a thick white fur round its edges; complains of slight pain in the belly; no inclination to sleep.

R. *Tinct Opii Camphorat.* ʒi.; *Acet. Opii.* gtts. xv.; *Vin. Colch.* gtts. x.; *aqua menth.* p. ʒi.; M. Sig. c. h. s.

Thursday, May 12, *mane*. Slept well last night; perspired pretty profusely; no tendency to delirium to-day; pulse 84; tongue improving in appearance, but patches of white fur still perceptible on its edges and posterior part; no motion in the bowels; complains of rheumatic pains in the right arm and leg.

R. *Puls. Rhei.* ʒi.; *Carb. Magnes.* gr. x.; *Vin. Colch.* gtts. xl.; *Aquae fontis* ʒi. M. Sig. C. St.

Thursday, May 13. Medicine operated well; has continued easy since yesterday; pulse 72; tongue almost clean.

May 14. Better in every respect, but feels weak; pulse 72; appetite rather keen. To be confined to farinaceous food.

May 15. As yesterday.

May 16. Continues to improve.

May 17. In every respect well, except that the bowels are rather open.

May 18, *mane*. Slept well; no motion in the bowels since yesterday; pulse 82; tongue very red and dry.

*Vespere*. Has had a good deal of pain in the belly, (which is increased by pressure,) and also in the back during the day; bowels several times moved; troubled with flatulence; pulse 88; tongue excessively dry, and of a blood-red colour. It was ascertained that she had taken some whisky toddy and beef-tea yesterday, contrary to advice.

R. *Opii puri* gr. ii.; *Calomel* gr. ii.; M. *Pil. fl. C. St.*

All stimulating food or drink strictly prohibited.

May 19, 8 A. M. Slept well; greatly relieved; pulse 78; pain in the bowels almost gone; tongue dry; belly bound. Half past 9 P. M. return of pain in the bowels; tongue dry and red; pulse 72; bowels three times moved to-day. *Rept. Pil. Opii, &c.* c. h. s.

May 20. Slept well; pain in the bowels quite gone; tongue dry but clean; pulse 82; slight attack of palpitation to-day.

*Rept. Pil. c. h. s.*

May 21. Continues easy; slept well; pulse 76; tongue becoming moist, and much less fiery in appearance; appetite improving; bowels not moved to-day.—*Interm. Pil.*

May 22. Bowels were moved twice yesterday after my visit; stools by report slimy; had a good deal of pain in the belly early this morning, and three or four times since; stools seculent, and light coloured. *Hab. Pil. Op. u. a. h. s. et mane* R. *Ol. Ricini* ʒi. cum. gtts. viii. *Acet. Opii.*

May 23. Feels well; bowels only moved once since yesterday, but very fully; tongue natural or nearly so; pulse 72.

May 24. Continued squeamish, but no further operation of the medicine, until this morning, when it operated twice. Stools massy and light-coloured; tongue still dry but very clean; pulse 72; appetite returning, and feels a desire to take a glass of ale or wine. To have the former and an egg.

R. *Ext. Colocynth.* ʒii.; *Ext. Hyocyami* ʒi.; *Calomel*: gr. vi. *Misce et in pil. xii. divide.* Two to be taken occasionally, when necessary.

May 25. Convalescent.

Case 4.—Mrs. M. aged 33, May 10.

At present nursing a child, (infant four months old) was affected suddenly yesterday with coldness and shivering, followed by pain in the back, violent headache and prostration of strength; pulse 92; tongue dry, brown in the middle, surrounded with white fur; bowels bound.—*R. Vin. Colch. xl. gtts. et Rept. gtts. xxx. quaque hora tertia donec vomitus vel catharsis supervenerit.*

May 11. Immediately after taking the first dose of the *Vin. Colch.* felt uneasiness in the bowels, and soon afterwards had a copious alvine evacuation, watery, but feculent. Took thirty drops for the second dose, three hours after taking the first; no motions in the bowels since, nor sickness, nor vomiting, but perspired profusely; headache greatly relieved; tongue cleaner and more moist; pulse 96; thirst as before. *Sumat gtts. xxx. Vin. Colch.* Secretion of milk greatly diminished. Half past 11 p. m. Has taken 100 drops in all; no vomiting since last visit, but the bowels had been very open, moved twelve or fifteen times; evacuations at first watery and feculent, but latterly have been watery without feculent matter or odour; headache almost gone; pulse 74; tongue almost natural in appearance.

*R. Tinet. Opii. Camph. ʒi. Acet. Opii. gtts. xviii. ; aqua fontis ʒi. Misce Sig. c. h. s.*

May 12. Slept pretty well last night; continues free from headache; pulse 68; bowels continue very open; secretion of milk scanty. The draught was repeated, and chicken broth and rice was ordered.

May 13. A. m. Slept well; perspired profusely in the night; free from every complaint except weakness; pulse 72; tongue quite clean; no motion in the bowels since yesterday, nor irritability of stomach; considerable desire for food. Secretion of milk increased. The medicines were stopped, and arrow root with port wine allowed.

May 14. Convalescent.

May 16. Continues free from symptoms of disease, but still weak; pulse 62; bowels regular; sleeps well; appetite indifferent; no thirst; tongue clean.—Two grains of sulphate of quinine were directed to be taken three times a day in jelly.

May 18. Health improves; feels much stronger; pulse 72; bowels regular. From this period she improved daily.

Case 5.—J. E. aged 19.

May 5, 1836. Was taken ill on Tuesday (3d May) with shivering, headache, pain in the back, prostration of strength; pulse 80. Took a dose of castor-oil yesterday; attempted to attend to his ordinary duty to day, as a joiner, but was not able.

He was directed to take immediately 60 drops of the meadow saffron wine, and 40 drops every third hour until vomiting or liquid motions should ensue.

May 6. A. m. Has taken of colchicum wine 220 drops, without vomiting or purging being produced; slightly sick in the morning; pulse 72; urine turbid.

6 p. m. At half past 1 p. m. was sick, and vomited three times in the course of the afternoon. Has been four times to stool; evacuations of an orange colour. Ordered to continue the colchicum wine in doses of 30 drops every three hours; has already taken 300 drops.

May 7, A. m. Very sick all night, and since six this morning has vomited nearly an ordinary wash-hand-basin full of greenish coloured, but not viscid fluid. Since last report has had frequent calls to stool; evacuations watery, at first greenish; afterwards of an orange colour; headache greatly relieved; tongue clean; countenance cheerful; temperature natural; pain in the back gone; pulse 100 sitting, standing 110; after being about ten minutes in the horizontal posture it fell to 62. Has taken half an ounce of the *Vinum Colch.* in the course of forty-eight hours.

May 8. Vomited none during the afternoon of yesterday; went early to bed; was sick and vomited occasionally in the night, but no motions in the bowels. Called to stool about 8 o'clock this morning, and nine times since; appetite not

much impaired, but vomits immediately after taking food; tongue clean. To take mild nourishing food of any kind.

May 9. Feels much better; has neither purged nor vomited since last report; slight headache this morning.

May 13. For several days after last report continued free from every symptom of disease except weakness. Went to Edinburgh on the 11th on foot, and walked about seven miles. Headache and excessive weakness was the immediate effect of this imprudence; pulse 100 and full; tongue furred. He was directed to take immediately forty drops of colchicum wine.

May 14. No vomiting after the medicine, but bowels have been moved nine times; stools watery; pulse 104; tongue clean.—Medicine was stopped.

May 15. Feels much better; slept well; pulse 86; tongue clean; bowels moved once since yesterday.

May 17. Free from every complaint but weakness. For this he was directed to take three times daily a wine-glassful of infusion of quassia, acidulated with dilute sulphuric acid.

May 19.—Continues to recover.

May 20.—Free from complaint, and returned to his ordinary occupation.

In the prospect of resuming this subject in a subsequent number of the Journal, I shall conclude this communication by remarking, that, from the phenomena and the results of the cases now adduced, I am convinced we may more certainly cut short fever, or at least break its force, by the judicious administration of colchicum, than by any other known means. I by no means, however, recommend that it should be trusted to exclusively in fever. Other medicines and means may, if deemed necessary or advisable, be employed, such as blood-letting, antimonials, the warm-bath, &c. I, however, am disposed to think that these will seldom be required, if colchicum be boldly but prudently prescribed in the early stages of the disease. It is corroborative of my opinion, as to the efficacy of this potent drug, that its action on the animal economy is consistent with its therapeutical agency. The immediate effects produced by colchicum on the stomach, the liver, the skin, and on the circulation, are such as would lead us, *a priori*, to expect that relief would be given to that state of the system which the most rational theory of fever presumes to exist.

Quality Street, Leith, Feb. 1837.

Edinb. Med. and Surg. Jour.

## PHYSIOLOGY.

### EXPERIMENTS ON THE MECHANISM OF THE MOTION OR BEATING OF ARTERIES.

By M. FLOURENS, (from Comptes rendus Hebdomadaires des Seances de l'Academie des Sciences, 23 Janvier 1837.

CONNECTED with the mechanism of the motion of arteries, two questions present themselves for consideration,—the cause which produces it, and the mode in which it takes place. M. Flourens considers these separately.

1. *The cause.*—Galen's opinion, that it depended upon a pulsific power, was founded upon the following experiment. Into the interior of an artery opened longitudinally, a tube was introduced, and a ligature placed so as to keep the artery in close contact with it. According to his statement, though the blood flowed into the artery beyond the tube, pulsation ceased. The experiment has been repeated by Vieussens, Magendie, and other physiologists, with an opposite result, and the following observations of M. Flourens corroborate their views. On introducing a goose quill into the aorta of a sheep, opened longitudinally, and fixing it in its situation by ligature, and even when a portion of the vessel was excised and the communication maintained by the quill, the blood was transmitted, and all the arteries connected with it continued to beat. M.

Flourens adopts Harvey's opinion, that the cause of the motion of arteries is the impulse communicated by the blood forced into them by the contractions of the heart. He discusses and repels the objections offered to Harvey's doctrine by Lamure, and shows the fallacy of the conclusion drawn from the following experiment. Lamure included between two ligatures a portion of an artery full of blood, and because this portion continued to move, he concluded that the motions of arteries were not produced by the impulse of the blood. The fallacy consists in his overlooking the fact, that the motion observed was communicated from the artery above the ligature, and was not proper to the artery.

2. *Mode.*—Galen believed this to be by successive dilatations and contractions. Harvey cut through an artery previously isolated, and, taking the cut end in his fingers, perceived it dilating at each pulsation. Weitbrecht, struck with the difficulty of explaining the whole motion of an artery by its dilatation and contraction, supposed that in addition, displacement or locomotion of the whole vessel took place. Lamure attributed it to elevation of the artery, and imagined that when he put one finger below and another above it, it started during pulsation so as to strike the latter. Arthaud having rendered the arteries of the mesentery straight in several animals, saw or believed that he saw the pulsation, which occurred when the arteries were curved, cease when they were straightened. M. Flourens repeated these experiments. To that of Harvey he objects, that it is very difficult to distinguish the pressure of the artery against the fingers, occasioned by the blood from its natural dilatation. Lamure has not stated correctly the result of his experiment, for when repeated by M. Flourens, the artery struck the finger placed above and that placed below it. Arthaud's experiment is unsatisfactory, inasmuch as, in drawing out the arteries to render them straight, they are weakened, and after all their motion does not altogether cease. The experiment of Harvey being then insufficient, that of Lamure inaccurate, and that of Arthaud incomplete; further inquiries appeared to be necessary. To determine the point, M. Flourens determined to investigate experimentally the different elements which concur in producing the motion of arteries, such as dilatation, locomotion, &c. Since the time of Bichat, who adopted the opinion of Weitbrecht, almost all physiologists have explained the pulsation of arteries by joining dilatation to displacement. Magendie has proved the dilatation of the vessel, and M. Poiseuille has invented an instrument to demonstrate it, though at the same time it shows this dilatation to be by no means considerable. To pursue the inquiry, M. Flourens contrived some instruments to exhibit any change which might take place in the diameter of an artery. These consist of small rings made of watch-spring divided at one point. These are formed in such a way, that when they embrace the artery both ends meet and no more. They had sufficient flexibility to yield on the smallest dilatation of the vessel, and when this ceased, their elasticity caused them to close. The smallest dilatation, then, of an artery will be appreciable, and they have this further advantage, that, from their being capable of being opened, they can be easily applied; and being of all sizes, one can be selected which will exactly embrace the artery, a condition quite indispensable for the accuracy of the experiment. One of these being applied to the abdominal aorta of a rabbit, the cut ends appeared to be alternately separated and approximated. This was repeated several times on different rabbits and always with the same result. On applying one of these rings to the abdominal aorta of a dog, the effect was more distinct, as might have been expected from the greater size of the vessel. From what has now been stated, it is evident that dilatation does take place during pulsation. To ascertain whether displacement takes place, and whether this is in direct proportion to the curvature of the vessel, M. Flourens began by examining what occurs at the angles or flexuosities of arteries. Here he observed a rise and fall, especially at the arch of the aorta, which was raised from the vertebral column. In the mesenteric arteries it was still more distinct, for these being in a great measure free or at least merely sustained by a fine membrane, the displacement can be the better observed. By increasing the curvatures the displacement was increased, and *vice versa*. The same was observed in the straight arteries, though to a less extent. To ascertain whether the artery was

elongated, M. Flourens marked with colour a point of the primitive carotid, and, placing a needle below it, observed it alternately advance and retire. Thus he concludes, that, in the pulsation of an artery, there are three primitive actions, dilatation, displacement, and elongation. It became desirable to ascertain to what physical quality of the organ these actions are due. M. Flourens thinks that it is elasticity. Bichat, Sir E. Home, D. Blainville, Beclard, and Chevreul have made us acquainted with the peculiar tissue to which this is owing, and Magendie has deduced from it the nature of the jet of blood which escapes from an open artery. According to him the jet continues under the influence of the contraction of the arteries, and is jerked by the contraction of the ventricles. Upon this M. Flourens remarks, that all the actions constituting the compound action of the artery, may be accounted for by the impulse of the blood and the elasticity of the vessel. Supposing the artery to be full, as it is in its ordinary state, each new quantity of blood forced into it by the ventricles cannot proceed without distending it in length and breadth, and bringing it nearer to a straight line, throughout its whole length.

The beating or whole motion of an artery depends on its elasticity.

## THE SALIVA.

### AS INDICATIVE OF THE STATE OF THE STOMACH IN HEALTH AND DISEASE.

At a meeting of the Academy of Sciences on the 20th of March, M. Dumas made the following report on a work of Dr. Donné, the object of which was the study of the saliva in a state of health, and in diseases of the stomach.

"The author has proposed to subject the saliva to a careful examination, in order to determine whether the nature of this secretion, so essential to the digestive process, varies or remains constant. He has satisfied himself that the saliva, which is ordinarily alkaline, becomes acid in certain cases, apparently in connexion with morbid affections of the stomach and alimentary canal. I have myself been furnished, by the author, with the means of verifying his results, and have in fact seen, with him, the saliva more or less acid in several patients in the hospital of La Pitié.

"In noticing this change, the mind naturally recurs to the theory by which it has been so often attempted to refer the secretions to the properties of the voltaic pile. It is certainly a striking fact, that the secretions are never neuter, but always either acid or alkaline; and this fact has already suggested the idea, that the secreting organs are the poles of a pile, separating the secreted fluids from the blood. If it is so, and if we are bound to regard the secretions as products of a decomposition effected by electric agency, it is difficult to explain how the poles of the pile could be reversed as a consequence of diseased action; yet it is not impossible to conceive that it may be so.

"We know in fact, that it is sufficient to change the exciting fluid of the pile in order to reverse its poles. If, therefore, the phenomenon of secretion is of an electric character, we ought, by changing the condition of the organ which performs the function of a pile, to change the nature of the fluids secreted. This change in the secretions would not, in this theory, imply that the secreting organ was morbidly affected; the disease would be elsewhere; and by discovering the organ which formed its seat, we should discover the seat of the electric action.

"In viewing the diseases in which the saliva becomes acid, one is struck with the dryness of the mouth; and the question arises, whether there can be in these cases a simple suppression of the salivary secretion, and whether the acid liquor which bedews the tongue, can be the gastric juice coming from the stomach. This query was submitted to the author. But as he has seen the pancreatic fluid itself become acid, as he has observed the acid state of the mouth reappear, immediately after the removal of its fluid contents by washing, and especially as he has remarked the saliva to be acid within the salivary

glands, it remains indisputable that the saliva may alter in its chemical character, and become acid in certain morbid affections.

"The acid state of the saliva must exert an injurious influence on the teeth, and too much care cannot be taken to obviate this in the numerous cases in which this change occurs for a transient period.

"The work of M. Donné is conceived in a just spirit of observation, and the facts it contains are exact. It would be very interesting to subject the principal secretions to a similar examination, not only with the view of ascertaining the modifications of which the several secretions are susceptible, but also for the purpose of determining precisely the alterations of the organs, and especially the condition of the great sympathetic nerve. These are inquiries to which no one is better qualified to do justice than M. Donné."

### EXPERIMENTAL RESEARCHES INTO THE PHYSIOLOGY OF THE HUMAN VOICE.

BY JOHN BISHOP, ESQ.—COMMUNICATED BY P. M. ROGET, M. D., SEC. R. S.

[Read before the Royal Society.]

"The following are the conclusions deduced by the author from the inquiries which form the subject of the present paper.

"1. The vibrations of the glottis are the fundamental cause of all the tones of the human voice.

"2. The vibrating length of the glottis depends conjointly on the tension and resistance of the vocal ligaments, and on the pressure of the column of air in the trachea.

"3. The grave tones vary directly, and the acute tones inversely, as the vibrating length and tension of the vocal ligaments.

"4. The vocal tube is adjusted to vibrate with the glottis by the combined influence of its variations of length and of tension.

"5. The elevation of the larynx shortens the vocal tube; and its depression produces the contrary effect. The diameter and extension of the tube vary reciprocally with the length.

"6. The falsetto tones are produced by a nodal division of the column of air, together with the vocal tube, into vibrating lengths.

"7. The pitch of the vocal organs, when in a state of rest, is, in general, the octave of their fundamental note.

"The paper was illustrated by several drawings."

### ON THE SAFETY-VALVE OF THE RIGHT VENTRICLE OF THE HEART OF MAN; AND ON THE GRADATIONS OF THE SAME APPARATUS IN MAMMALIA AND BIRDS.

BY J. W. KING, ESQ.—COMMUNICATED BY THOMAS BELL, ESQ.

[Read before the Royal Society.]

"In this paper additional evidence is given by the author in corroboration of the principles which he had announced in a former communication, which was read to the Royal Society in May 1835, on the influence of the tricuspid valve of the heart on the circulation of the blood. His object is to demonstrate that the tricuspid valve in man occasionally serves the purpose of a safety-valve, being constructed so as to allow of the reflux of the blood from the ventricle into the auricle, during the varying states of distension to which the right cavities of the heart are at times subjected: that a similar function is maintained in the great number of animals possessing a double circulation, and also that in the different orders of these animals the structure of this valve is expressly adapted to the production of an effect of this kind, in various degrees, corre-

sponding with the respective characters and habits of each tribe. He is thus led to conclude that the function which the tricuspid valve exercises exhibits, in the extent of its development, a regular gradation, when followed throughout the different orders of Mammalia and Birds: and that it extends even to some Reptiles."

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## ON THE BRAIN OF THE NEGRO, COMPARED WITH THAT OF THE EUROPEAN AND THE OURANG-OUTANG.

BY FREDERICK TIEDEMANN, M. D.

[Read before the Royal Society.]

"It has long been the prevailing opinion among naturalists that the Negro race is inferior, both in organization and intellectual powers, to the European; and that, in all the points of difference, it exhibits an approach to the Monkey tribes. The object of the present paper is to institute a rigid inquiry into the validity of this opinion. The author has, for this purpose, examined an immense number of brains of persons of different sexes, of various ages, and belonging to different varieties of the human race, both by ascertaining their exact weight, and also by accurate measurement of the capacity of the cavity of the cranium; and has arrived at the following conclusions. The weight of the brain of an adult male European varies from 3lb. 3oz. to 4lb. 11oz. troy weight: that of the female weighs, on an average, from 4 to 8 oz. less than that of the male. The brain usually attains its full dimensions at the age of seven or eight; and decreases in size in old age. At the time of birth, the brain bears a larger proportion to the size of the body than at any subsequent period of life, being then as one sixth of the total weight: at two years of age it is one fourteenth; at three, one eighteenth; at fifteen, one twenty-fourth; and in the adult period, that is, from the age of twenty to that of seventy, it is generally within the limits of one thirty-fifth and one forty-fifth. In the case of adults, however, this proportion is much regulated by the condition of the body as to corpulence; being in thin persons from one twenty-second to one twenty-seventh, and in fat persons often only one-fiftieth, or even one hundredth of the total weight of the body. The brain has been found to be particularly large in some individuals possessed of extraordinary mental capacity. No perceptible difference exists either in the average weight, or the average size of the brain of the Negro and of the European: and the nerves are not larger, relatively to the size of the brain, in the former than in the latter. In the external form of the brain of the Negro a very slight difference only can be traced from that of the European; but there is absolutely no difference whatsoever in its internal structure, nor does the Negro brain exhibit any greater resemblance to that of the ourang-outang than the brain of the European, excepting perhaps, in the more symmetrical disposition of its convolutions.

"Many of the results which the author has thus deduced from his researches are at variance with the received opinions relative to the presumed inferiority of the Negro structure, both in the conformation and relative dimensions of the brain; and he ascribes the erroneous notions which have been hitherto entertained on these subjects chiefly to prejudice created by the circumstance that the facial angle in the negro is smaller than in the European, and consequently makes, in this respect, an approach to that of the ape, in which it is still farther diminished. The author denies that there is any innate difference in the intellectual faculties of these two varieties of the human race; and maintains that the apparent inferiority of the Negro is altogether the result of the demoralizing influence of slavery, and of the long-continued oppression and cruelty which have been exercised towards this unhappy portion of mankind by their more early civilized, and consequently more successful competitors for the dominion of the world."



## HYGIENE.

## THE FACTORY SYSTEM AND FACTORY STATISTICS.

IN the present short notice of the influence of the factories on health, we do not intend to discuss the whole question, but simply to exhibit a few of the facts.

A slight sketch of the history of factory labour may not be unacceptable. While it shows the unrelenting inhumanity of avarice, it displays the difficulties with which philanthropy and benevolence must struggle, before they can effect their noble ends. The system of employing children as factory labourers was the result of Arkwright's inventions. His looms took manufacturers out of the cottages and farm-houses, and assembled them in the counties of Derbyshire, Nottinghamshire, and more particularly in Lancashire, where the machinery was used in large factories, built on the sides of streams capable of turning the water-wheel. There was an immediate demand for hands, and children were found to be best adapted for the work. The custom instantly sprang up of procuring apprentices from the different parish workhouses of London, Birmingham, and elsewhere. Many thousands of children, between the ages of seven and of fourteen years, were carted to the North. The horrors of this apprentice-system appear to have been dreadful. But it is past, and we need not rake them up again. But one fact may be stated. An agreement was made between a London parish and a Lancashire manufacturer, stipulating that, with every twenty sound children, one idiot should be taken!

The toil, the scourging, the crowding, the filth of the receptacles for the apprentices, reached such a height, that these outrages on nature were taken in hand by Nature herself, and pestilential fevers became alarmingly destructive. The public was roused, and a board of health was instituted at Manchester, and made its report in 1796. That report was highly damnable of the factory system.

In 1802, the late Sir Robert Peel introduced and carried his first bill for the Relief of the Apprentices. It did relieve them, but steam being now applied to manufactures, the site of factories was removed from the sides of streams to towns and populous districts, where labour could be readily obtained, and where apprentices were an useless incumbrance. The bill afforded no protection for the children now employed, and, in 1815, Sir Robert proposed a second measure, which was not carried till the session of 1819. Sir Robert had limited the hours of actual labour to eleven, for all persons between the ages of nine and sixteen. The commons would not hear of eleven hours as an ultimatum, and extended the number to twelve.

The actual nature of the factory-labour was as follows:—

It was in nearly all the cotton-mills of Lancashire and its neighbourhood, excepting Saturday, from thirteen to sixteen hours a day, inclusive of one hour, or less, *nominally* allowed for dinner. Many of those subjected to such labour were children of nine, eight, seven, and six years of age, and previously to the stirring of the investigation, under six, and, in some instances, *under five*! The children continued constantly at work so long as the machinery was in motion, during which time they were not permitted to sit down or to leave the factory. They often complained (naturally enough, our readers will think) of fatigue, and aching limbs; in this state of exhaustion, towards the close of the day, they were beaten by the spinners, or overlookers, or even by their own parents, that blows might supply the deficiency of strength. In most cotton-factories, during the greater part, and often the whole of the time *nominally* allotted for dinner, the children were occupied in cleaning the machinery; no time was allowed for the breakfast or afternoon meals, which were snatched in mouthfuls during the progress of uninterrupted labour; the refreshments not unfrequently remaining untouched till it became cold, and covered with dust and dirt from the cotton-flyings. It appeared, moreover, that the temperature in

many cotton-mills was from 75° to 80°, in others from 80° to 85°, and occasionally as high as 90°.

Such was the state of things when, in 1819, the twelve hours' Bill was carried. After the lapse of a few years, Sir John Hobhouse introduced an eleven hours' Bill, which was buried. He obtained, however, an act in 1825, which limited the labour of persons under sixteen to sixty-nine hours in the week, twelve on five days and nine on Saturdays. But his bill comprised the cotton-factories only. In 1831 it was somewhat improved by the prohibition of night-work for all under twenty-one, and by the advance of the ages entitled to protection from sixteen to eighteen years. It is obvious that while something had been gained, humanity had yet much to effect, before she could be satisfied. Mr. Sadler, a very eloquent and a very earnest advocate of the cause of the factory-child, first appealed to the country in 1831, and brought in his bill in the ensuing session. The measure was cushioned, and Mr. Sadler never was in parliament again. A committee, which was appointed on the introduction of the bill, elicited a mass of evidence, which attracted the attention, and greatly excited the feelings of the public. A commission was now appointed by the crown, and the commissioners, four of them medical, were directed to investigate personally and systematically the condition of the children. Their report was presented to the house of commons in July, 1833. In March of that year, Lord Ashley had moved the first reading of a bill, resembling in all essential particulars, that of Mr. Sadler. It sought to restrict the labour to a period of ten hours, for all ages from nine to eighteen. The second reading of the bill was postponed until after the presentation of the report, which, as we have observed, was in July. The report, in question, recommended eight hours as the ultimatum of labour for young children, and on that recommendation was based the law which is now in operation. The law in question, Lord Ashley's proposition being superseded, enacts :—

A period of eight hours for all under thirteen, and one of twelve for those between thirteen and eighteen. By a clause, it was provided that the act should come into operation by parts, each in succession. At the end of six months, children under eleven were to enjoy the benefit of the eight hours' limitation; at the end of eighteen, all under twelve; and at the end of thirty, all under thirteen. Subsequently, the ministry endeavoured to vitiate the act, but met with a defeat, and it is at present the law of the land. There is every reason, however, for believing that a ten hours' bill for all ages will at no great distance of time be introduced, and as medical evidence has throughout been properly depended on as the basis of any legislative enactments, we have laid before our readers this sketch of the history of the various measures that have been attempted or adopted.

It only remains for us to notice some of the facts adduced, to show the actual working of the factory system.

Dr. Ray, in a pamphlet, intitled, 'The Moral and Physical Condition of the Working Classes employed in the Cotton Manufacture in Manchester,' after presenting an elaborate survey of the streets, and the houses inhabited by the operatives—and after painting in the darkest colours the imperfect ventilation and the filth of all, introduces us to the person and the family of a cotton-spinner. Let us accompany the Doctor down a lane containing 'heaps of refuse, deep ruts, stagnant pools, ordure, &c.,' and opening the door of what is facetiously called a house, let us gaze upon the inmates :—

"The population employed in the cotton-factories," continues the Doctor, 'rises at five o'clock in the morning; works in the mills from six till eight o'clock, and returns home for half an hour or forty minutes, to breakfast. This meal generally consists of tea or coffee, with a little bread. Oatmeal porridge is sometimes, but of late rarely, used, and chiefly by the men; but the stimulus of tea is preferred, and especially by the women. The tea is almost always of a bad, and sometimes of a deleterious quality; the infusion is weak, and little or no milk is added. The operatives return to the mills and workshops until twelve o'clock, when an hour is allowed for dinner.

"Amongst those who obtain the lower rates of wages, this meal generally

consists of boiled potatoes. The mess of potatoes is put into one large dish; melted lard and butter are poured upon them, and a few pieces of fried fat bacon, are sometimes mingled with them, and but seldom a little meat. Those who obtain better wages, or families whose aggregate income is larger, add a greater proportion of animal food to this meal, at least three times in the week; but the quantity consumed by the labouring population is not great. The family sits round the table, and each rapidly appropriates his portion on a plate, or, they all plunge their spoons into the dish, and with an animal eagerness satisfy the cravings of their appetite. At the expiration of the hour, they are all again employed in the workshops or mills, where they generally again indulge in the use of tea, often mingled with spirits, accompanied by a little bread. Oatmeal or potatoes are, however, taken by some, a second time in the evening." 420.

During twelve hours of the day, the operative drudges, in a heated atmosphere, watching the movements, and assisting the operations of a steam engine. His toil is incessant, and rational relaxation he can have none, because, when the hours of work are over, bodily fatigue precludes every thing save indulgence in spirits, in the grossest sensuality, or in the indolence of mere exhaustion. What wonder then, that the factory labourers have become as a class degenerate in body—debased in mind—a grovelling, gin-drinking, demoralized set, whose animal vices are painted in the most revolting hues by those who have narrowly watched their habits. We have not room for the statements of Dr. Kay and of Mr. Gregg on this head, nor do they so much concern us, as the merely physical effects of labour.

It appears that the whole number of persons employed in cotton-factories in the year 1835, was 220,134, four-times as many as in 1818. Of that number, 94,287 were between the ages of eight and eighteen years—and 125,877, above the latter age.

It is singular to observe the effects of the improvements in machinery on the labour of the operatives. It will be remembered that in 1819, the legislature declared that twelve hours of mill-work were sufficient. The following calculation serves to exhibit the amount of labour undergone when that enactment was carried.

"A Table showing the distance over which a piecer had to travel, in following a pair of mules spinning cotton-yarn of No. 40, in the year 1815.

The spinner put up £30 stretches daily, on each of two mules. 12 yards long each, and was attended by three persons.	Number of stretches daily.	Number of yards from mule to mule.	Number of yards comprising the piecer's work along each mule, and over which he must walk each stretch.	Total Number of yds.	Distance in miles.
	1640	5	4	14,760	8 and a fraction.'

"The operation of the bill would appear to have done any thing but diminish the spinner's toil. The ingenuity of cupidity travelled faster than the legislation of humanity, as the next statement will demonstrate.

"A Table showing the distance over which a child must walk, in following a pair of mules spinning cotton-yarn of No. 40, at Manchester, in 1832.

The spinner puts up daily 3000 stretches on each of two mules.	Number of stretches daily.	Number of yards from mule to mule.	Average number of yards which a child walks along each mule per stretch.	Total Number of yds. daily.	Distance in miles.
	4400	5	3	35,200	90.'

At Bolton-le-Moors, the wheels would appear to revolve with still more astonishing rapidity, and it is estimated that a piecer, in attending a pair of mules spinning cotton-yarn, must there travel daily twenty-five miles! All this is done in a heated and impure atmosphere, by persons indifferently fed—an irksome daily drudgery, performed under the stimulus of absolute necessity. That the lower classes in a manufacturing country, or indeed in any, must either work or starve is true, and an exaggerated and preposterous compassion may be entertained on their behalf. But where the numbers of the labourers are such that the competition among them resulting from necessity, disables them from defending themselves against the exactions and tyranny of capital, both humanity and policy demand the interference of the nation, and the effectual protection of parliament.

If such reasoning is applicable to the case of adults, how much more forcibly must it apply to children—to those helpless creatures consigned by inhuman parents to almost as inhuman overlookers—who are made to taste the most sickening toil and care at the only age which nature has intended to be free from them. We cannot effect the Utopian project of releasing the poor man's child from labour, but we can and we ought to make that consistent with the powers of childhood. As medical philosophers we are called on to determine what those powers are, and what amount of work is consistent with the integrity of the infantile constitution. As medical practitioners we have been summoned to report, and probably we shall be summoned again, on the actual results of the existing system. The evidence that we have given has not always been calculated to exhibit either our candour, our science, or our good feelings, and we may be sure that the intelligent portion of the public both remarks and remembers these disadvantageous exhibitions.

It seems that the tendency of the factory system is to substitute more and more exclusively, the labour of the young for that of the adult. There are many apparently good reasons for this, on which, however, we need not insist, as the fact is all we want. The consequence is, that the old are thrown on the young for support, the reverse of the order of nature. A sad picture has been drawn by too many observers of the subsistence of parents on offspring. That, however, is a consideration which belongs to the moral, rather than the medical philosopher, and we dismiss it. It concerns us more to hear that—

“The number of operatives above the age of forty is incredibly small. We must refer our readers to a curious but authentic document, arranged about the year 1831, during a great “turn out,” from forty-two mills in Mosley, Ashton, Staley-Bridge, and Dukinfield, of 1665 persons, whose ages ranged from fifteen to sixty. Of these 1584 were below forty-five; three only had attained a period between fifty-five and sixty; and not more than fifty-one between forty-five and fifty were counted, as fit for work! Mr. McNish, a witness entitled to the utmost credit, even by the admission of the commissioners, and in truth, as every one must perceive upon reading his evidence, a man of singular sagacity, deposed, in the year 1832, that, by actual enumeration of 1600 men in the factories of Renfrew and Lanark, he ascertained that no more than ten had reached forty-five years of age, and these, he added, were retained by the special indulgence and humanity of their masters. The spinners at that period are so broken down that they cannot produce the required quantity. “Their eye-sight fails,” and then they are turned off, and younger men employed.”

We now quit this subject. We have drawn the attention of our readers to it, because it is evidently still unsettled, and will again occupy the attention of the legislature. Medical evidence may once more be requisite, and it is well for the profession to be put in possession of the general facts, which will enable it to form a more comprehensive and more accurate estimate, of the various bearings of the question at issue. Independently of this, which may be said to be in some measure a personal consideration, it is daily becoming more indispensable for the medical practitioner to be well informed, on matters which affect the health of large sections of the nation. His opinions are frequently publicly asked, and if inconsiderately or ignorantly expressed, they redound to his own disgrace, and to the shame of the profession.”—*Med. Chir. Rev.*

## MEDICAL STATISTICS OF THE ARMY.\*

Lieut. Tulloch, of the 45th Regiment, who is at present officially employed on the statistics of the army, has published in the United Service Journal, some calculations on the mortality of officers in the army, which are interesting not only to the corps, but to all of us.

The first table which we shall present, exhibits the mortality of officers of the British army at home and abroad.

TABLE I.—P. 182.

I. FULL PAY.	AT HOME AND ABROAD.				
	Number of Officers among whom the mortality occurred.	Period over which the Calculation extended.	Total Deaths in Nine Years.	Proportion died in One Year.	Annual Mortality per cent.
<b>RANKS.</b>					
Lieut. Colonels	122	1826—1835	31	3.444	2.8
Majors	206	Ditto	34	3.777	2.833
Captains	1040	Ditto	187	20.777	2.
Lieutenants	1494	Ditto	316	35.111	2.35
Ensigns	889	Ditto	90	10.	1.125
Total	3752		658	73.111	1.949

The average annual mortality is nearly *two* per cent. throughout the whole infantry serving at home and abroad.

It may at first appear singular that the mortality should be so great among the lieutenants, who are comparatively young. The reason is a simple one—they are particularly exposed to the dangers of foreign service.

“The deaths among the lieutenants being greater than among the captains arises from the larger proportion of the former rank serving in the East Indies, where regiments have a double complement of lieutenants. The reason of the mortality among the majors being less than among the captains is somewhat similar; as there is only one major abroad with the service companies out of two, while there are six captains out of ten. Many of the majors are also young men, having attained that rank rapidly by purchase.

“The mortality among that portion of our officers who never serve abroad, viz. the Household Troops, Heavy Cavalry, and a large proportion of the Light Dragoons, is very low. Out of an annual strength of 711, there have only died 53 in nine years, or 5.9 per annum; being in the ratio of little more than 0.8 per cent.

“The mortality among the Artillery and Engineer officers who do not serve in the East Indies, and have not so large a portion of foreign service and bad stations as the Infantry, has been as follows:—

“*Artillery*.—Average strength, 430—Died in nine years, 55—annually, 6 1-9—Ratio per cent. 1 4-10.

“*Engineers*.—Average strength, 221—Died in nine years, 24—annually, 2 6-9—Ratio per cent. 1 2-10.”

The ratio of mortality among officers on the half-pay list, according to their ranks, for the same period of nine years, is exhibited in the next table.

\* British Med. Almanac, for 1837.

TABLE II.

	Total Number unemployed.	Total Deaths in Nine Years.	Deaths Annually.	Rates per cent. Annually.
Majors	465	89	9.88	2 1-8
Lieut. Colonels	535	118	13.11	2 1-2
Colonels	266	44	4.88	*1 5-6
Major Generals	224	58	6.44	2 9-10
Lieut. Generals	215	89	9.88	4 6-10
Generals	96	55	6.11	6 1-3

The last table we shall admit is one which exhibits the mortality of officers in our different colonies, for the period of nine years already selected. During that period there has been comparatively little sickness in our West Indian possessions. The officers of the European corps have now considerable facilities in returning home, when in bad health, to do duty with the dépôts of their corps—a circumstance which must materially tend to diminish their mortality. But the colonial corps, having no dépôt companies in this country, and being generally at the worst stations, are, of course, less favourably situated, and the deaths among them are proportionably great.

TABLE III.

STATION.	DESCRIPTION OF FORCE.	Ratio per cent. of Deaths annually among the Officers at each Station.
Bengal	Infantry	4.7
	Cavalry	2.1
Madras	Infantry	5.3
	Cavalry	3.4
Bombay	Infantry	3.
	Cavalry	1.8
Ceylon	Infantry of the Line	1.4
	Colonial Regiments	3.7
	Average of all Officers	2.6
Mauritius	Infantry	1.0
Windward and Leeward Islands,	Infantry of Line	2.2
	Colonial Corps	7.1
	Average of all Officers	3.8
Jamaica	Infantry	3.9
New S. Wales	Infantry	1.2
C. of Good Hope	Infantry	1.5
N. America and Bermuda	Infantry	.8
Gibraltar	Infantry	1.2
Malta	Infantry	.9
Ionian Islands	Infantry	1.2
Sierra Leone	Colonial Corps	13.
Great Britain and Ireland	. . . . .	1.1

\* The mortality among the Colonels has been lower than among the junior grades, as there are many of them comparatively young men, having got on rapidly in the first ranks of their profession during the war: many of them too, were mere boys when they entered—a practice lately put a stop to.

## THERAPEUTICS AND MATERIA MEDICA.

## AN EXPERIMENTAL INQUIRY INTO THE RELATIVE PHYSIOLOGICAL PROPERTIES OF IODINE AND ITS COMPOUNDS.

BY DR. COGSWELL.

The following may be noticed as among the facts observed by Dr. Cogswell, the gentleman to whom the Harveian prize was lately awarded, for the best dissertation on the relative physiological and medicinal properties of iodine and its compounds. Dogs and rabbits were the chief subjects of his experiments.

Tincture of iodine injected into the veins, so far from being inert, as indicated by Magendie, quickly destroys life with symptoms analogous to those occasioned by hydriodate of potash. Two drachms, that is to say, twice the quantity employed by the above named toxicologist, proved fatal to a well sized dog.

Devergie, who was the first to institute a formal investigation into the physiological action of hydriodate of potash, found that dogs were soon killed by it when thrown into the circulation, and that the same animals died within three days from the effect of two or three drachms, placed in contact with the inner membrane of the stomach, the organ exhibiting ecchymoses and other consequences of irritation. These latter results, upon which some recent observations were calculated to throw doubt, have been confirmed by the present writer, who also destroyed animals within a short period, by introducing the salt beneath the skin. A drachm of hydriodate of potash thus administered simply produced local irritation in an experiment of Devergie; but the quantity should be somewhat larger in proportion to the strength of the animal.

The iodides of iron, zinc, lead, and mercury, seemed rather to follow the action of the ordinary compounds of the bases, than that of iodine itself. A singular and interesting result ensued from throwing the hydriodate of iron into the vein of a dog; bloody alvine discharges repeated at short intervals for several hours, during which the animal kept constantly moving, and after death, the whole tract of the intestinal canal displayed increased vascularity and bloody effusion. The rectum had its inner membrane for the most part rendered intensely purple, from the minuteness with which its vessels were injected with coloured globules. In the lungs were numerous ecchymoses giving a beautiful spotted appearance to these organs.

Dr. Cogswell has repeatedly succeeded in detecting combined iodine through the various solid textures of the body by means of starch, but could never obtain it in its free state. When added to a portion of urine, it did not seem capable of dissolving without previously undergoing combination, so that it will generally be in vain to look for free iodine, in this quarter. By the same test he has ascertained, that iodine vaporizes several degrees below zero of Fahrenheit, and that a freezing temperature does not prevent it rising from its solution in water or in hydriodate of potash, although the fluid round the sides of the vessel may be congealing.—*Edinb. Med. & Surg. Journ.*

*A Treatise on the Malformations, Injuries, and Diseases of the Rectum and Anus.* Illustrated with Plates. By GEORGE BUSHE, M. D., formerly Professor of Anatomy and Physiology, &c. New York, French & Adlard, 1837. pp. 299. 8vo. Nine Plates, 4to.

THIS is a valuable work—one well adapted to enlighten the general practitioner, who is neither a mere surgeon nor a mere physician, respecting the nature and treatment of a class of diseases, troublesome and irritating even when their effects are purely local, but obstinate and often intractable, and on occasions fatal, when they affect the system at large. A correct diagnosis, at all times desirable, is here of peculiar value, by guiding not only to the use of the best therapeutical agents, but also to that of surgical means, which happily are in the power of most practitioners; for timidity depends more on doubts of the propriety of the course to be pursued than on the difficulty of the operation.

Notwithstanding the different monographs on the diseases of the rectum by Copland, Bell, Mayo, Howship, Waite, &c., &c., the one now before us by Dr. Bushe, claims and must receive a full share of respectful attention from the professional reader on both sides of the Atlantic. A description of the anatomy and functions of the rectum is followed by a chapter on the malformation of both rectum and anus, arranged under the heads of imperfection of the anus; imperfection of the rectum and its varieties; unnatural terminations of the rectum and termination of other organs in this gut. The probabilities of relief being obtained, and the means for doing so are next indicated.

In the chapter on *Foreign Bodies in the Rectum*, we are told that they "may be divided into two classes—viz: those which are generated in consequence of diseased action of the digestive organs and those which are either swallowed or introduced through the anus. The former embrace biliary, intestinal, and fecal concretions; while the latter include pins, nails, fruit stones, coins, small bones, &c., taken in by the mouth; or pieces of wood, cork, meat, bone, linen, ivory, and metal, pots, cups, bottles, ferrules, rings, and the like, forced into the anus, either completely or incompletely, sometimes by the individual himself, with a view to obviate costiveness, or in consequence of a perverted imagination, but more commonly by wicked persons who generally take advantage of the inebriated state of their intended victim."

"The instruments necessary for extracting these bodies are blunt hooks of different sizes and shapes, a lever, gimlet, cutting forceps, strong long scissors with probe points, a six-inch narrow saw, wooden gorgere, polypus and lithotomy forceps of different shapes and sizes, a speculum, strong waxed ligatures, metallic tubes of various length and size, and a probe-pointed bistoury; to all of which the crooked finger and a small hand are admirable adjuncts."

It is not of course meant by the above enumeration that all, or many even, of the instruments are required in every case of extraction of a foreign body from the rectum. According to the size and nature of the obstruction will be the instrument for its removal. Saucerotte, as we learn in a note, withdrew a piece of wood, three inches in length and two in width, with a corkscrew, which he inserted into the wood, while he steadied it with the fore-finger of his left hand. Bruchman performed a similar operation with a gimlet. "When the foreign body is large or spiculated, it may be necessary to divide the sphincter in order to seize and extract it safely." This however, notes the author, can rarely be necessary, for the anus is very dilatable. Dr. Bushe gives a case in which he



operated by extracting, with no more injury than slight laceration of the mucous membrane, a concretion, six inches and three quarters in circumference, and two inches and a half in length. The patient, a delicate female thirty-five years of age, had been for seven years subject to constipation and repeated attacks of colic. Precise directions are given for the removal of various bodies, as bone, ivory, wood, or horn, from the rectum, for which we refer to the work itself.

"When indurated feces obstruct the rectum, they should be removed with the scoop or the finger. This unpleasant task I have twice performed. In one case the constipation was of fifteen and in the other of nine days' standing."

Laceration of the Rectum, of the incomplete kind, in which the laceration seldom extends beyond the mucous tunic, constitutes the subject of the fifth chapter. The author says.—"The great object in the treatment of this injury is to keep the bowels easy by the use of emollient lavements; and after each evacuation to cleanse the wound; for I have seen some cases in which the lodgment, even of a small quantity of feculent matter between the lips of the wound, created the most agonising pain and spasm of the sphincter ani. If the patient be very irritable, and the wound tender to the touch, the better plan will be to pass a pencil of caustic over it twice or thrice, and then apply a cataplasm made of bread, and a solution of the superacetate of lead with laudanum. Should ulceration be established, the treatment recommended for fissure (see chapter IX) will become necessary." Blood-letting is seldom necessary: purgation inadmissible. A light, vegetable regimen, and the horizontal posture, should be enjoined. Three cases are given "to illustrate, and give a more practical bearing to this subject."

Different species of complete laceration of the rectum, and their causes, are enumerated by Dr. Bushe. The *first*, "the accident most commonly designated rupture of the rectum, is in reality nothing more than rupture of the sphincter ani, and is produced by parturition." In the *second* species the rupture is above the sphincter, and is sometimes produced by the elbow or lower extremity of the child, by the crotch, by forcible straining to evacuate the rectum, when impacted with indurated feces, but more commonly by the introduction of foreign bodies, particularly of bougies and injecting pipes; these instruments being forced in some instances into the vagina, and in others into the peritoneal cavity. The *third* species is a laceration of the vagino-rectal partition, sphincter, and perineum. "This is most commonly produced by the head or buttocks of the child being directed so far backward, that when the uterus contracts the recto-vaginal portion is forced downwards before the head of the child and protruded through the dilated anus, and then ruptured from within outward."

"In the treatment of the different lacerations of the rectum, the patient should be confined to the horizontal position, and put upon a meagre diet; the lacerated parts should be kept clean, cloths saturated with lead water and laudanum ought to be applied, and the bowels kept easy with emollient enemata until suppuration is established. If there be much fever, blood should be taken from the arm; and provided the surrounding parts be unduly inflamed, leeches may be applied.

"When granulations sprout up, we should cease administering enemata, and on the contrary, give small doses of laudanum to suspend the alvine evacuations

during the healing process. It is only at this period, that sutures should be inserted; for in the many cases I have witnessed, I have never seen one in which union by the first intention took place."

Dr. Bushe thinks that, when the rupture only extends through the sphincter and mucous membrane, the sutures commonly used are not always sufficient to accomplish the desired end, because they do not extend to the bottom of the cleft. To obviate the inconvenience which is ascribed to the interrupted suture, Dr. B. has devised a pin, which is represented in plate VIII, fig. 4.

Inflammation of the Rectum, the subject of Chapter VI, "arises from a variety of causes, as the introduction and extraction of foreign bodies, the lodgment of indurated feces, biliary or alvine concretions, ascarides, hemorrhoids, repelled dartrous eruptions, gout, rheumatism, the application of cold and wet, surgical operations, and acid secretions, produced by a vitiated state of the system, disease of some other viscus, or the action of drastic purgatives."

Following this enumeration of the causes is a full description of the symptoms of this disease, the chief of which are burning and throbbing in the fundament, which is increased by an erect posture:—the act of defecation is accompanied and followed by severe pain, assuming a spasmodic character, considerable fever, irritation of the urinary organs, dysury, strangury, or even retention of urine. The cellular tissue external to the rectum becomes engorged, and at times suppurates. The inflammation sometimes extends to the colon, and also to the peritoneum. Females are sometimes tormented with bearing down and profuse mucous discharges from the vagina. "It not unfrequently happens that, after the disease has continued a few days, an abundant purulent secretion takes place, with which the pain, burning, and throbbing, subside; the febrile symptoms disappear; and complete restoration rapidly ensues."

We are properly told that, in the treatment of this affection, the first object should be to ascertain the cause which has produced it. If the fever be violent, irrespective of the cause, blood should be taken from the arm—a measure still more necessary, should there be symptoms of peritonitis. But under ordinary circumstances, the application of leeches around the anus will serve the purpose of general blood-letting.

Inflammation and Excoriation of the Anus are treated of with brevity, and yet clearness, in Chapter VII.

The eighth chapter is on Inflammation of the Rectum and Anus from the application of Gonorrhœal Matter.

For Fissure of the Anus, in Chapter IX, the author recommends that the patient should be kept on a low diet, and confined to a recumbent position. "If the disease be mild, the application of the unguentum acetatis plumbi will be sufficient for its healing, and if there be much spasm of the sphincter, the extract of belladonna will prove a powerful auxiliary. The common practice of administering cathartics, so as to produce fluid evacuations, cannot be too highly censured."

"When a fissure will not heal under this treatment, and the patient continues to suffer, we should no longer delay the division of the sphincter, which never fails to give immediate relief, and to effect a rapid cure."

Neuralgia of the Rectum is illustrated by cases, in Chapter X. Dr. Bushe thinks that in the majority of those described by authors, in which both the anus and the genito-urinary organs were said to be the seat of neuralgia, no such

disease affected the anus, but that the sphincter ani was thrown into a state of powerful contraction in consequence of irritation of the genito-urinary apparatus.

In one case, after the use, in vain, by the patient, of the customary remedies for neuralgia, Dr. Bushe, by an incision through the painful part and the sphincter, gave entire relief.

Spasmodic Contraction of the Sphincter Ani is more particularly described in Chapter XI. Besides that which is caused by fissure and neuralgia, "there are two other species of spasmodic contraction of the sphincter, viz., that which depends upon functional or structural disease of the genito-urinary organs, and that in which we cannot trace any other primary affection, either in the rectum or elsewhere." Cases are given illustrative of both these species.

Ulceration of the Rectum is more specifically noticed in Chapter XII, especially that which may arise from inflammation and the entanglement of feces in the lumen. After describing the symptoms, and noticing the difficulty of healing this ulceration, Dr. Bushe tells us:

"All ulcerations in this region require the recumbent posture, a diet affording the least excrementitious matter and emollient enemata. If there be fullness and throbbing in the anal region, leeches should be applied, and if there be much general excitement, phlebotomy may prove serviceable; but the cases in which one or the other may be required, are very few indeed. When the general health is impaired by other diseases or improper habits, it should be improved by appropriate means; and when there is great irritability anodyne combined with sudorific remedies may become necessary."

Added to this treatment, the use of the nitrate of silver, or of stimulating ointments, to which, if there be spasm of the sphincter, belladonna may be added, will generally cure the ulceration. When more extensive, painful, and attended with severe spasmodic contraction of the sphincter, no application will avail, and it will be necessary to divide the sphincter and the ulcer, when practicable, in order to procure the desired relief. Dr. Bushe gives cases as examples of the disease. "When it attacks many points of the rectum, and extends high up, it will generally terminate fatally, especially in bad constitutions, in spite of the most judicious measures."

Chapter XIII, on Venereal Ulceration of the Rectum, is short. "What has been said with regard to the symptoms and treatment of pure ulceration of the rectum, is applicable to the impure form now described; but, in addition, anti-syphilitic remedies will become necessary."

The "Affections called Hemorrhoidal" constitute the subject of Chapter XIV, which is the longest, and by most readers will be thought the most interesting in the work. The symptoms are given in detail, and they are certainly numerous enough, including weight and pain in the forehead, vertigo, precordial anxiety, palpitation, stricture of the epigastrium, syncope and hurried respiration, darting sensations resembling those of electricity, and painful, difficult, and frequent micturition.

The preternatural distention of the vessels of the rectum with blood, either subsides after a few days, gives rise to hemorrhage, the formation of tumours at the anus, inflammation, or mucous discharge.

The bleeding usually occurs during defecation, sometimes preceding, but generally following the passage of feces. "The amount of blood discharged

is not always in proportion to the severity of the symptoms, denoting the loaded state of the hemorrhoidal vessels." We read accounts of great losses of blood on these occasions, though commonly the quantity is small. Pommé relates the case of a man who, during a month, lost nearly a pound of blood daily, which was followed by colic pains and swelling of the extremities.

"The blood evacuated is of a bright vermilion colour, and is exhaled by the extremities of the capillary vessels, as may be demonstrated by an examination of the mucous membrane when protruded, an occurrence which very often takes place in these cases. In some instances fine streams of blood are seen to issue from dilated pores which we are afterwards unable to detect. Besides this evidence of the source of the discharge, the symptoms which precede the flow of blood, their subsidence on the occurrence of hemorrhage, together with the colour of the blood, plainly demonstrate the nature of the attack. However, when the bleeding has been profuse, the vessels may become so debilitated as to allow the blood to escape from their extremities, constituting passive hemorrhage."

The following remarks and opinions of Dr. Bushe are of great practical moment, and are introduced here, since the circumstances giving rise to them may be presented to every practitioner for his adoption or refusal.

"This flux, by presenting a determination of blood to the organs essential to life, wards off fatal disease, and, therefore, its suppression is attended with imminent risk. The nervous temperament, predisposition to disease in some other organ, particularly if the morbid action has already commenced, or if the organ is in sympathy with the rectum, the application of heat or cold, depressing passions, wet feet, fatigue, profuse perspiration, vomiting, hemorrhage from some other part, phlebotomy and the application of astringents, are the causes which suppress this discharge, and consequently give rise to colic, fever, inflammation, hemorrhage, organic lesions, and nervous complaints. Both ancient and modern authors abound with such cases, and from my own observation, I shall furnish a few, in a subsequent part of this chapter. There are two, however, which proved fatal, and accordingly are well suited to this place. A gentleman between fifty and sixty, of short stature and full habit, who for many years had been subject to a profuse discharge of blood from hemorrhoidal tumours, underwent an effectual operation for their removal, and died in seven months afterwards of apoplexy.

"Another gentleman, under thirty, for a few years laboured under a free hemorrhoidal discharge, which, as it debilitated him, was checked by astringents. In a short time, however, he was attacked with pulmonary hemorrhage, and at the end of a year and a half, he sunk, after a profuse discharge of blood."

The author then points out how the hemorrhoidal flux is distinguished from dysentery, scurvy, and hemorrhage either from the intestines or stomach.

The tumours formed in consequence of the immoderate accumulation of blood in the rectum may be divided into two classes; the first situated within, and the second immediately without the anus. Those situated within the anus vary in number and size, differing in this last respect, from that of a small pea to a pullet's egg. Their anatomical characters are thus described:—

"I have repeatedly injected these tumours with coloured water, both from the arteries and veins, and when cut into while the fluid was projected, small jets were observed to issue from many points. I have frequently dissected them with the greatest care, and found that they were spongy, reddish, and contained both arteries and veins, the latter being most capacious, but always perfectly healthy. Their surface is villous, and generally bleeds when touched roughly, or scratched with the nail, the blood which issues being of a florid red colour. In many instances, I have been able to rub off exceedingly vascular and fragile adventitious membranes from their surface. Thus, it would seem, that they may acquire an increase of magnitude in this way.

In a note, Dr. Bushe gives a good bibliography of the authorities on the nature of hemorrhoidal tumours. These are of two classes. By one they are considered as varices; by the other, they are ascribed to a different origin.

It not unfrequently happens, that, in consequence of inflammation in the tumours, small abscesses form in them, attended with a discharge of purulent matter from the anus, and more pain and irritation of the parts than usual. Such cases are far from being uncommon, and are too often overlooked. Directions are given for detecting them, either by introducing the finger and feeling the fistulous orifice of such tumours, or by forcibly separating the buttocks by an assistant, while the patient bears down,—then, with a strong light, and a probe of small size, the sinus will be easily found.

"Occasionally, these tumours are attacked with ulceration, and in such cases it generally seizes on many points at the same time, but seldom advances to any great extent." Hemorrhage is sometimes the result of the ulcerative process.

Cases are detailed by the author showing the extreme irritation of the genito-urinary organs in both sexes, and consequent exhaustion of the system from hemorrhoidal tumours. The removal of the latter was followed by the disappearance of all the painful symptoms.

"These tumours may be confounded with prolapsus of the mucous membrane of the rectum and polypi of this intestine."

"The second class of tumours are those situated on the verge of the anus, though I have seen a few cases in which they extended a short way within this orifice, being in part covered with the mucous membrane. They are more or less livid, generally elastic, have an extensive base, and are formed of extravasated blood, which is encysted by condensed cellular tissue, and covered by a few fibres of the sphincter and fine skin of the verge of the anus. I have satisfied myself of these facts, by cutting off the prominent portion of the tumour, and then turning out the extravasated blood in the living body, and by cautious dissection in the dead."

The absorption of the contained blood is followed by hypertrophy of the surrounding cellular tissue, and pendulous flaps or tumours which, in some instances, from their rough or warty character, give rise to great irritation.

*Mucous discharge* may arise from the same cause as inflammation, and in this way supply the place of the sanguineous evacuation. Sometimes it precedes, but more commonly follows the hemorrhoidal flux.

The *causes* of hemorrhoidal affections, as enumerated in the work before us, are sufficiently numerous to meet every variety. They are as follows:—

"The structure of the part: age: sex: climate: period of the year: hereditary predisposition: the suppression of other hemorrhages: habit: plethora: other diseases: passions: constipation: pregnancy: the development of tumours in the pelvis and abdomen: disease of the liver, pancreas, spleen, lungs, heart or aorta: obliteration of the inferior mesenteric vein: tight lacing: concussion of the abdomen: the application of bandages to the inferior extremities: pierced seats: certain alimentary substances: stimulating purgatives: irritating enemata: diarrhoea: dysentery: prolapsus of the rectum: ascariides: external irritation: stone in the bladder: stricture of the urethra: disease of the prostate; and excessive venery."

Remarks are made on these causes, the perusal of which, we refer to the work itself. In regard to the comparative frequency of hemorrhoids in the two sexes, Dr. Bushe thinks that males are most subject to them.

The translation of disease from the head, lungs, and stomach, &c., by epistaxis

hemoptysis, hematomesis being succeeded and replaced by hemorrhoids, is noticed by the author. The influence which the menstrual and hemorrhoidal flux exercise on each other, is also mentioned.

In describing the treatment of these affections, the same order is pursued as that adopted in investigating their pathology; and hence the author proceeds to state the various remedial measures to be had recourse to, under the heads of congestion, hemorrhage, tumours, inflammation, and mucous discharge. Our space will not allow of a detail of these as exhibited in the work before us. To its pages we would refer our readers for the requisite filling up of the outlines which we give here.

The specification of the means of relieving the patient from tumours about the anus, leads Dr. Bushe, of course, to describe the operations for their extirpation. On this point he speaks with the caution becoming an observant and careful practitioner, when, after describing the remedies, general and topical, he adds :—

“The means now stated are sufficient, in the majority of cases, to enable the individual to pass his life comfortably; but when, in spite of their judicious employment, the tumours continue to be neuralgic, attended with spasm of the sphincter, subject to protrusion, or bleed profusely, they ought to be removed. I must here, however, caution the inexperienced against precipitate determination, and this I cannot more effectually do, than by repeating, that hemorrhoidal affections are generally constitutional, and serve to ward off fatal disease of other organs; therefore, it is absolutely necessary to interrogate the patient as to his hereditary predisposition to other disease, to the present state of the organs most essential to life, to his health previous to the formation of these tumours, and the influence they have since exerted on it. Having, after a mature consideration of his case, determined upon the propriety of removing them, the patient ought to be informed of the course of treatment, which we shall specify in another place, as necessary after the operation, and without he consents to pursue it, the surgeon ought not to proceed to the operation. Indeed, when we meet with a rational patient, we ought to explain to him all the circumstances relative to his case, or, if he be not a sound thinking person, it will be prudent to confer with some of his friends; a course not only proper in this, but in all other cases, which may present themselves for operation.”

The operation once determined on, it remains to inquire into the best method of performing it. Dr. Bushe gives a decided preference for the ligature over excision. In this he is sustained by the authority and experience of Dr. Physick, and the very pointed expression of opinion by Dr. Gibson in his *Institutes of Surgery*. “That excision is not likely to be attended with hemorrhage, I deny,” says Dr. Bushe, “for I have performed the operation several times, and after it, have had to tie up arteries, plug the rectum, and in one instance to apply the actual cautery. Indeed, I so nearly lost two patients, that when left to my own choice, I no longer have recourse to this operation.”

In case of profuse bleeding after excision an instrument is recommended to be used by Dr. Bushe, which he constructed for suppressing hemorrhage after lithotomy.

“The operation by ligature,” according to the emphatic testimony of the author, “is that which I prefer when the operation is left with me. I have now performed it, I am sure, upwards of a hundred times, and I have never seen a bad symptom follow.” He adds, that he invented some instruments, in order to enable him to operate with more precision, readiness, and satisfaction

the various means pointed out by preventive hygiene or curative therapeutics. His illustrations by cases are numerous and pertinent, and their value is still further enhanced by the numerous coloured drawings of morbid structure, and engravings of the instruments which he employed, and the mode of using them. The style of the work is plain and clear; and if inaccuracies are here and there observable, and not unfrequent typographical errors, seldom however sufficient to mar the sense, we must attribute them to the circumstances under which the work was carried through the press, viz., the pressure of business, and declining health. Some of the proofs the author was compelled to trust to others for correction.

It is painful, even for those at a distance and who never had personal acquaintance with Dr. Bushe, to learn that he was cut off, in the very prime of life, from a profession which he was not only fitted to improve, but which he was successfully practising, and to which he made no unimportant additions. His Essay on Cleft Palate was the first of his productions which met our eye, and from this we were led to form the favourable augury of his ability as a surgeon, in the large and liberal sense of the word, which the present work has, we think, fully confirmed.

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*Address, in Refutation of the Thomsonian System of Medical Practice, delivered in the Lecture Room of the Chester County Cabinet of Natural Science, West Chester, Pennsylvania. December, 1836.*  
By SUMNER STEBBINS, M. D.

There are some subjects so entirely at variance with the simplest deductions from experience, and in which ignorance and knavery are so intimately compounded, that, if we have regard either to the impostures themselves, or to their authors and abettors, we should be hardly justifiable in noticing the former or in rebuking the latter. But when they obtain a certain degree of credence, and their strange dogmas are made to regulate or influence people's conduct, it seems but an act of common charity to hold up their absurdities to ridicule, and their mischievous operation and tendency to scorn.

It is, we may presume, on these grounds that Dr. Stebbins has thought it worth while to give a refutation of the Thomsonian System of Medicine, if that can be called a system which is composed of the strangest jumble of ideas, unconnected and illy, if not faithlessly, reported facts, all expressed in a jargon which would do credit to any itinerant mummer or alleged worker of magic. There is something frank in the announcement of its foundation by the author of the 'system' himself. It consists in a denial of the necessity of learning, and of a knowledge either of the structure of the human frame, or of the functions of its several parts, or of the changes and modifications to which it is subjected by the agents which are continually acting on it. The labours and investigations, the experiments and experience of all past times, are to be at once obliterated by this zealous reformer, who begins afresh the cure of diseases in as happy an ignorance of every thing connected with the subject as is dis-

played by the priests and jugglers of heathen and barbarous tribes. Of what use are anatomy and physiology, chemistry and materia medica, to a man who coolly tells his fellow citizens : "I am convinced, myself, that I possess a gift in healing the sick, because of the extraordinary success I have met with, and the protection and support Providence has afforded me against the attacks of all my enemies."! And again : "I finally concluded to make use of that gift which I thought the God of nature had implanted in me, and if I possessed such a gift I had no need of learning, for no one can learn that gift."! It seems, however, that this gift did not render its possessor equal to each emergency as it presented itself, so as to dispense him from the necessity of forming a system. Nor was this system general deductions from either his own or others' experience ; but it was framed after he determined "to make a business of medical practice." A system thus framed anterior to observation and practice, did not, of course, require amendment, or admit of improvement after any period, no matter how long, of experience. He began "with certain conclusions concerning disease and the whole animal economy," and ends by affirming that thirty years' experience perfectly satisfied him that they furnish "the only correct theory."

Thomson's chemistry is of the most primitive nature, being conceived in happy ignorance of the labours and discoveries of a Black, a Priestley, a Lavoisier, a Davy, or a Prout. He found, "after *maturely* considering the subject, that all animal bodies are formed of the four elements, earth, air, fire, and water. Earth and water constitute the solids, and air and fire, or heat, are the cause of life and motion." Equally simple and lucid, as far as regards a lack of ideas, is his pathology. "Cold in lessening the power of heat is," he informs us, "the cause of all disease." "The constitutions of all mankind are essentially the same, and differing only in the different temperament of the same materials of which they are composed." Again : "it appeared clear to my mind that all disease proceeded from one general cause, and might be cured by one general remedy." Cold is the bane, heat the antidote, with this worthy. In order to establish a natural internal heat, effectually cleanse the stomach, and promote perspiration, he begins the treatment of every disease with what he calls his emetic herb, No. 1, (*Lobelia*). But, as this would not hold the heat long enough, and "was like a fire made of shavings," he, "after much experience and trying," fixed upon the medicine which he terms No. 2, (*Cayenne pepper*). Of No. 2 he says "I am perfectly convinced that it is the best thing that can be made use of to hold the heat in the stomach until the system be cleared of obstructions, so as to produce a natural digestion of the food, which will nourish the body, establish the perspiration, and restore the health of the patient. *I found it perfectly safe, in all cases, and never knew any bad effects from administering it.*"

Having thus taken care of the stomach, he directs his attention to the bowels ; but not to inquire into their contents, nor whether they ought to be evacuated of these, or whether they are in a state of inflammation which threatens disorganization. His "next grand object was to get something that would clear the bowels of *Canker*, which are more or less affected by it, in all cases of disease to which the human family are subject." He has made use of a great many articles with this intent, but found that the best is what he calls "my prepara-



tion No. 3," (Bayberry root bark, white pond Lilly root, and the inner bark of Hemlock). "When necessary" he "made use of steaming," after giving No. 2.

Among the numerous specimens of Thomsonian skill which have caused either the great reformer or his fellows to be brought before the courts of their country for murder, is one which Thomson himself records. The patient, a female suffering from dropsy, was able the day but one before her death, to go from Exeter to Salisbury mills, the residence of the possessor of the "gift," of the original steamer, and to look around for a boarding house. Under his care her career was terminated in brief space. Subsequently, Thomson was indicted for the murder of Ezra Lovett, but acquitted, it is believed, upon the plea of ignorance, and not design on his part. Not satisfied however with his acquittal, he brought an action against Dr. French, his accuser, for damages. This gentleman, in his defence, endeavoured to prove that Thomson had been guilty of murdering eight persons. So strong was the evidence for this defence, that Judge Parsons, in his charge to the jury, declared that Dr. French was fully justified in making the accusation. Thomson's own report of the case is thus given:—

"He (the Judge) stated: 'That the defendant was completely justified in calling me a murderer, for if I was not guilty of wilful murder, it was *barbarous, ignorant murder*, and he even abused my lawyers for taking it up for me, saying that they ought to be paid in '*screw augers*' and '*bull dogs*' [meaning Lobelia]. The jury brought in their verdict of justification on the part of the defendant, and throwed the whole costs on me, which amounted to about two thousand dollars."

This, it must be acknowledged, exhibits no very enviable workings of the 'gift,' nor evidences of 'extraordinary success;' the two chief motives, as we have seen, for his commencing the career of medical reform and a new and simple practice. But that impiety which could make a man claim, as a gift from the Deity, a mode of attempting the cure of diseases, resulting in deaths so sudden, and so numerous as to subject him to the accusation, justified by a jury of his countrymen, of murder, does not end here. He could receive this gift without the aid of knowledge or reading, but he will not admit that others can be similarly favoured. He teaches his system which is patented in a book, and initiates them into its mysteries by selling this latter for the sum of twenty dollars. But if the applicant should chance to be a practising physician he must pay five hundred dollars for the same privilege. *Twenty dollars* then is the price of a 'family right,' and *five hundred dollars* the price of a 'right' to practise it as a profession. On opening the book, a small duodecimo of 300 pages, the buyer is met by a formal implied agreement between himself and the author, made in "the spirit of mutual interest and honor," and binding the latter "to give whenever applied to, any information that shall be necessary to give a complete understanding" of the system; and imposing upon the former an obligation of profound secrecy, except to the initiated. The buyer has, however, by right of purchase, obtained admission into the 'Friendly Botanic Medical Society,' with all its honors, and is moreover entitled to the privilege of, "a free intercourse with the members, for information and friendly assistance."

We are indebted to Dr. Stebbins, for the above particulars of the 'New System:' new it certainly is, if we consider the impudence and impiety by which it was engendered, the ignorance and imposture by which it is pretended to be sustained; and the deplorable results both in the hands of the originator himself and of his patented followers, or of those others who claim the 'gift,' and exercise it in utter disregard of the laws of the animal economy, and of experience of the effects of the various agents, dietetic and medicinal, by which it is acted on.

The following very pertinent comments were made by a friend of Dr. Stebbins, and introduced by the latter into his lecture:

"Does the author of this 'new system' really possess the gift which he professes to exercise? We read of some who professed gifts to heal the sick, by some miraculous or supernatural display of power,—but I am unacquainted with any instance of such a gift to perform *EXTRA-ordinary* cures, by a 'system' of *ordinary* remedies. If the one under consideration be such a one, it is fairly entitled to the character it has assumed, of a 'NEW SYSTEM.'

"Now the author of this system either does or does not possess 'a gift to heal the sick.' If he does possess it, then we have his own declaration, written by himself, that 'NO ONE CAN LEARN THAT GIFT;' and by good consequence, that he cannot communicate the knowledge or the efficacy of it to others. Yet in the face of his own declaration—that 'no one can learn that gift'—he makes merchandize of it, and 'agrees to give whenever applied to, any information that shall be necessary to give a complete understanding of the obtaining, preparing and using all such vegetables as are made use of in said system; to all such as purchase the right.' He is, therefore subject to the charge of swindling the ignorant and credulous out of their money, under the specious pretence of furnishing them with knowledge which he knows cannot be communicated, because 'no one can learn that gift.' In so doing, he abuses his gift, he profanes holy things. But if he does not possess the gift, then he is chargeable with impious presumption, in making pretensions to such a gift when he does not possess it, for the wicked purpose of obtaining the people's money by gross imposition and falsehood. It is daring impiety. He may take which horn of the dilemma he chooses.

"In like manner, the advocates of 'Thomsonianism' either do or they do not believe it to be of Heavenly origin. If they do so believe, and if the 'gift' cannot be communicated to others—'if no one can learn that gift'—from whence have they learned it? Either they have not learned it, or the twenty dollars or five hundred dollars 'right,' as the case may be, is used as a *permit* and an *order* on the God of nature to bestow the 'gift' upon the purchaser of the book. Will the Thomsonians acknowledge their ignorance, or will they subscribe to this blasphemous consequence? But perhaps they do not believe in the Heavenly origin of the 'new system'—in the *extra-ordinary* and *super-natural* pretensions of their master, to the high behests of Heaven. If they do not believe in this, why do they sustain and encourage him in propagating his impious pretensions. By so doing, they become his abettors, and render themselves amenable for his impiety to God, and his impostures on his fellow men. They become *particeps criminis* with the patentee, in vending his spurious and profane things. Here then is a dilemma which is neither unicorn nor bicorn, but multi-corn—a dilemma having many horns. They may choose the shortest and least pointed, or perhaps there may be a horn for each man."

It is a melancholy spectacle, to see professors of religion, men of probity in other respects, either directly participating in this and similar impostures, or giving it a sanction by submitting themselves and their families to the practice which it enjoins. They ought to be aware, that not only is empiricism in one subject apt to lead to empiricism in another; but that the imputation of it will

diminish the sphere of a man's usefulness. The divine who plays the part of a quack doctor, or consorts with empirics, must expect to be regarded by the well informed in the light of a quack theologian and a quack preacher. And the professor of religion, who is known to adhere to one set of errors in medicine, made up of ignorance and impostures, must not be surprised that the force of his example goes for so little in favour of truths in another direction, of the highest moment. If, with better knowledge, he is notoriously insincere on one subject, what confidence can we have in his sincerity on others: or, should we put faith in his sincerity, what reliance can we place on his judgment in matters of religion, when we see him so helplessly credulous, in believing every idle assumption, and giving weight to the slightest analogies, whilst overlooking or denying the clearest historical evidences and the most positive demonstrations. No man can be held excusable, on the plea of inability to go over the whole ground and evidence for adopting or abetting any mode of practice by which the life of a fellow-creature is at stake. To say that he acted in the case with the best intentions, and to the best of his opportunities, will be of little avail, if it can be shown that his ignorant and feeble attempts excluded the better directed ones of experience and knowledge.

There is a strong leaning on the part of many persons, in every community, in favour of quackery and impudent promises. This fellow-feeling, which makes us wondrous kind, manifests itself in a sympathy of the crowd with the ignorant pretensions of empirics, and a real pleasure to see those who have been elevated above them by education, intelligence, and social standing, in any way rebuked or lowered in public estimation. Let it be a question between a quack, no matter how great a dolt he may be, and a regular physician of the highest repute and admitted learning and abilities, and we shall find, that the majority either openly, or by casual remark and impliedly, will advance some reason or pretext in favour of the former, and in detraction of the latter. The falsehoods of the one, in the shape of alleged cures, are eagerly caught at and circulated; and the known success of the other overlooked and seemingly forgotten. Even when the deception of the quack is exposed, and his pretensions placed in their proper light, a sudden feeling is got up in favour of the poor devil so berated, and the physician is charged with persecuting him prostrate, whom, when successful, he was accused of envying.

Borrowing still further from Dr. Stebbins' discourse, we shall give a few additional illustrative specimens of the sapience of Thomson, so as to show the grounds on which the members of his school rest their claims to practice medicine, and to take charge of the lives of their fellow-creatures. One is amazed at the chain of causation put together by this character, in his account of the case of a man bitten by "*a rat supposed to be mad.*" He draws from it the inference, that "the cause of mad rats and mad cats, is owing to the rats having been poisoned by rats-bane, the cats eat them and become affected by the poison which makes them mad, and by biting the people, communicate the poison from which many fatal consequences have frequently happened." Certainly, the most absurd, if not the most fatal consequence of a rat being poisoned, is the madness of the man who can believe and announce gravely to the public such trash.

This case exhibits in appropriate light, the wonderful effects of the practice under the "new system." The poor man was subjected during six months, the period which elapsed before he was cured, to vomits and steaming for an injury of one of his eye-brows, which would most probably have got well in ten days if treated by any good housewife.

We have neither room nor any malicious desire to weary our readers by introducing Thomson's views of fever, consisting as they do of hitherto unimaginable absurdities expressed in an unintelligible jargon. The two dominant assumptions in it, are, 1st, that "heat is life;" 2d, "cold is the cause of all disease and death."

Here is another example of novel pathology—"These two names of disease are one and the same thing. A freeze is a *direct cold*, and a burn is *attracted cold*."

We have in the following paragraph, a true Homeric impersonation of heat and cold, which are made to do battle with each other as fiercely as Hector and Achilles before the walls of Troy.

"There is no other difference in all cases of fever, than what is caused by the different degrees of cold, or loss of inward heat, *which are two adverse parties in one body contending for power*. If the heat gains the victory, the cold will be *disinherited*, and health will be restored; but, on the other hand, *if cold gains the ascendancy*, heat will be dispossessed of its empire, and death will follow of course. When the power of cold is nearly equal to that of heat, the fever or *strife between the two parties* may continue for a longer or shorter time, according to circumstances; *this is what is called a long fever, or fever and ague*. The battle between cold and heat will take place periodically, sometimes every day, at other times every other day, and they will leave off about equal, *heat keeping a little the upper hand*. When it is said that a fever will *turn* at such a time, I presume it must mean that it has been gone; this is true, for *it is then gone on the outside, and is trying to turn again and go inside where it belongs*."

Inverting the usual proposition on the subject, he affirms, that there is a deficiency of heat in the stomach and internal organs; but he is so far consistent as to pour in the most stimulating and irritating matters into the *cold* febrile stomach; such as a compound of brandy, Cayenne pepper, and gum myrrh, which he calls No. 6. The effects of such potions on an inflamed or highly irritated mucous membrane may be readily admitted, even if the melancholy records of Thomsonianism did not fully prove them. They are, disorganizing inflammation of the gastro-intestinal mucous membrane, inordinate excitement of the vascular and nervous systems, maniacal ravings, muttering delirium, and death. Is there a city or place of any amount of population, in which the Thomsonians have gained a foothold, that has not furnished victims labouring under the above symptoms caused by this cruel imposture.

In equal ignorance of the functions and of the means of acting on them, and of their phenomena, this original, whilst professing to increase the heat, and thus, according to his notion, to increase the life of the body, throws the patient into a profuse and exhausting perspiration,—depleting the system by the fluid lost, and cooling it by the evaporation of this latter from the surface of the skin.

The following farrago is part and parcel of his novel aphorisms. "Heat is life, and cold death; fever is a friend and cold the enemy; it is therefore necessary to aid the friend and oppose the enemy in order to restore health." "The

higher the fever runs, the sooner the cold will be subdued." "Taking away the blood reduces the heat, and gives power to the cold, and the coldness of the stomach causes canker." "To take away any part of the blood, therefore, is taking away just so much of their life, and is as contrary to nature, as it would be to cut away part of the flesh." "All constitutions are alike, being formed of the four elements; all disease proceeds from one cause and might be cured by one general remedy." "When the outward heat becomes equal with the inward, one's being raised or the other's being lowered, cold assumes the power and death takes place." "When the inward and outward cold is balanced, life ceases, and the blood being stopped in its motion, settles in spots which appearance has given name to what is called spotted fever. The same appearances take place on drowned persons, and from the same cause."

The *Materia Medica* of Thomson is a fit commentary on the principles which he professes to adopt. He and his set raise a great outcry against any mineral preparation, as deadly, destructive, and what not, and contend that our remedies ought to be taken from the vegetable kingdom alone. It never occurred to him to contrast the mineral preparation sub-carbonate of iron with his favourite Lobelia, or even calomel with Butternut, and the drastic purgatives gamboge, elaterium, &c. Whence come a long list of poisons of most concentrated virulence; opium, henbane, nux vomica and the cherry-laurel, with its prussic acid? There is not, let it be added, a single article of the boasted vegetable *Materia Medica* of Thomsonianism, with which the regular physician is unacquainted, and which he does not, on occasions, in fit measure and discretion, employ. The entire novelty of the steamers consists in the exquisite absurdity of their doctrines, and their reckless disregard of the responsibility which every man of common sensibility, and the smallest conscience must feel, when he is intrusted with the life of a fellow-creature.

Doctor Stebbins, in his address, has commented with point and force on the glaring enormities of the new system, and has shown himself to be a critic of whom charlatanry may well stand in dread.

Our own excuse, as it doubtless was Doctor Stebbins's, for touching on this matter, is the same as that which we should give for entering into any detail on a nauseating and disgusting subject, viz: the necessity of pointing out the nuisance and its prejudicial effects, in order to warn one part of the community against approaching it, and the other, more immediately suffering from its presence, to abate and remove it without delay.

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We had prepared a tolerably full notice of Dr. SEWALL's "Examination of Phrenology," for our present number; but its insertion is unavoidably postponed.

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Dr. HAYWARD's Discourse on Some of the Diseases of the Knee Joint, delivered before the Massachusetts Medical Society at their Annual Meeting, May 31st, 1837;—and Dr. ALEXANDER's Observations on the Anatomy and Physiology of the Capillary Blood-vessels (in the Boston Medical and Surgical Journal), are entitled to, and will receive, from us, more than this acknowledgment of their having reached us.

# THE ECLECTIC JOURNAL OF MEDICINE.

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## PHYSIOLOGICAL OBSERVATIONS ON THE PULSATIONS OF THE HEART, AND ON ITS DIURNAL REVOLUTION AND EXCITABILITY.

BY DR. KNOX.

[Read before the Royal Society in Edinburgh.]

MORE than twenty-two years have elapsed since my attention was first turned to the physiological history of the pulsations of the human heart and arteries. The investigation was an experimental one, and led to conclusions which were deemed satisfactory by many physiologists, and even novel by some; a rare instance of good fortune in respect to them, since the experimenter was still alive.

A very extended criticism, favourable to a degree far beyond the merits of my original papers, appeared in a foreign journal, whose name I have in vain endeavoured to recollect; thus without a reference to it, it is impossible for me to say from recollection, whether the very candid author (a German) of that critique added much that was new to my discoveries, or contented himself merely with their verification; but this I do recollect, that he considered the physiological conclusion as perfectly legitimate. Dr. Elliotson, whose name stands so deservedly high as a skilful practical physician and most learned writer, (merits so opposite in character and so difficult to attain) has honoured me with a passing notice in a foot-note to his first edition of a translation of Blumenbach's Physiology, and the opinion he there expresses is, that my doctrines of the pulse, if well founded, are totally subversive of the Cullenian doctrine of simple fever, and, (what I consider more worthy of attention,) opposed to the views of the great Haller.

My first memoir was published in the Edinburgh Medical and Surgical Journal for 1815. The original observations were extremely numerous, made cautiously and without a bias. I shall therefore, having every confidence in them, first, restate the results then obtained, compare them with what had been done previously and since, and finally, repeat them with views as free of bias as formerly, but matured, it is to be hoped, by an experience of more than twenty years passed exclusively in the exercise of my profession.

It is but doing an act of justice to myself to state, that when I published my original papers on the pulse, I did not feel myself called on to publish more

than what I had myself observed. The fashion of adding what is misnamed the "literature" of a subject to my own observations did not prevail then so much as now; and in publishing at that time the result of my inquiries and observations, it did not appear to me necessary to go back to Hippocrates and Galen, Albucasis, Hildanus, Guy de Chauliac, and a host of names so easily quoted even without the trouble of consultation. To me, at that time, it was a question of exceedingly trifling import who first observed, who last; but now that the question of priority has been agitated before a numerous public association,\* I cannot pass over altogether in silence this the least profitable part of the inquiry.

In republishing a brief abstract of my first memoir on the pulse,† and the result arrived at, I feel it to be but justice to myself in the first place to compare them with the opinions of a very late observer, who, having gone without doubt unconsciously over the same ground, has arrived at conclusions so strictly resembling my own in most respects, as to give me the greatest confidence in the accuracy of my original observations.

The author I allude to, Dr. Graves, who, in a paper "on the effects produced by posture on the frequency and character of the pulse in health and in disease," published in 1830, has reproduced, nearly word for word, the results obtained by me in 1815, and even some of my conjectures; a coincidence extremely satisfactory to me, since it would seem that Dr. Graves had never read my memoir. I am indeed aware, that of late it has become usual to reprint the views and even original experiments of others without the smallest acknowledgment of the source whence they were derived, and this, too, without putting themselves to the trouble of altering or mystifying the original text, in order to prevent the reader tracing the plagiary to its source; but I am very far from believing that in the present instance there are any grounds for such a suspicion.

"On the relation subsisting between the time of the Day and various functions of the Body; and on the manner in which the Pulsations of the Heart and Arteries are affected by Muscular exertion. By Dr. KNOX."

*Edin. Med. and Surg. Journal*, 1815.

"1st. During the morning the mere change of posture from the horizontal to the erect renders the pulse more frequent by about 15 or 20 beats. At midday the increase is about 10, and in the evening 4 or 6."

"2d. Were it allowable to apply the rigorous language of calculation to a science which cannot be called exact, we should be disposed to say that such increase in the frequency of the pulse is in a direct ratio of the debility. Hence in fever the slightest change of posture (as from the horizontal to the erect) is often productive of an incredible velocity of the pulse."

\* British Association held at Dublin.

† By "pulse" I mean of course the pulsations of the heart, felt for convenience sake in the radial artery at the wrist. The arteries do not pulsate, so that there is no such thing as arterial pulsation properly speaking. Hence I have often read with surprise a passage in Mr. Harison's very excellent work on the arteries, in which the author speaks of "restoring the pulsations of the humeral artery by bending the arm." This excellent anatomist surely must know that neither bending nor extending the arm can affect in any way the course of the blood in the artery. He evidently mistakes the locomotion of the artery for the heart's pulsations. There are two or three physiological errors included in the short passage I allude to.

"On the Effects produced by Posture on the frequency and character of the Pulse in Health and in Disease. By Dr. GRAVES."

*Dublin Medical Journal*, 1830.

"1st: In healthy persons, the pulse in the erect posture is more frequent than in the horizontal, from 6 to 15 beats in the minute."

"2d. In patients labouring under fever, or in a debilitated state from any other cause, the difference in the frequency of the pulse caused by changing from the horizontal to the erect posture may amount to 30, 40, or 50."

"3d. The frequency of the pulse on a change of posture is nearly in the direct ratio of the debility of the person. This fact may ultimately prove a valuable asthenometer."

"4th. On this principle we may explain satisfactorily, I think, many of the supposed stimulant effects of foxglove, &c."

"3d. The greater the debility of the patient the more frequent does his pulse become on change of posture."

"4th. Authors who have written concerning the effects of digitalis, &c."

Several other passages might be cited in order to show how exactly the two observers had travelled over the same ground, and, what is satisfactory enough to reflect on, had arrived at precisely the same conclusions. There are two points, however, touched on by Dr. Graves, which I do not as yet fully understand. First, it is said, that in hypertrophy of the heart there is no differential pulse, or, in plain language, the action of the heart is not quickened by a change of posture. This I at present, for reasons to be shown afterwards, do not believe. The second is a curious experiment made by Dr. Graves, to ascertain what would be the effect of counting the pulse of a person placed on the top of his head. I confess I never thought of this posture, being one I could not myself have remained in for an instant without danger of apoplexy; but there are heads which will stand much bad usage.

Dr. Graves further believes, that when the pulse rises on a change of posture from the horizontal to the erect, it is not the muscular exertion which causes this. I adhere to an opposite opinion, for reasons to be more fully explained in the third part of this essay.

My original papers touch on numerous other points in the physiological history of the pulse, with many of which Dr. Graves seems to have been unacquainted, such as the diurnal excitability and numerical revolution of the pulse; the effects of powerful and moderate stimulants, of strong exercise, &c.; these, therefore, it becomes unnecessary to notice in this place.

Dr. Graves, to whom my researches into the physiology of the human pulse were unknown, seems also to have been unacquainted with the writings of Dr. Bryan Robinson, who *originally*, in the strict sense of the term, went carefully over the same ground about a hundred years ago, arriving at results, differing, it is true, in certain respects from those of more modern observers, but yet agreeing with them in many essential points; and therefore anticipating them, as may be remarked I trust without giving offence to any one, by the trifling period of a century. Yet even he does not appear to have been the first who endeavoured to obtain the "constants," if I may say so of the human pulse. M. Quetelet assures us that we owe this to Kepler.\* It will be sufficient for our purpose that we adopt Dr. Robinson's essays as a starting point. By a brief analysis of his observations and experiments, the subject may readily be brought down almost to the date of my first memoir. From this period questions previously considered as simple were proved to be complex, and a literature was added to the subject, whether profitably or not, I may perhaps consider at some length in a concluding analysis.

Of Dr. Bryan Robinson† some might deem it sufficient merely to quote a passage in his preface; "Sir Isaac Newton discovered the causes of muscular motion and secretion; and likewise furnished materials for explaining digestion, nutrition, and respiration." With some this passage would be decisive as to his views, and as to what was to be expected from his writings. But this would be doing his ingenious work great injustice. Though based on false views of the animal economy, it contains several perfectly original observations; above all, it contains the attempt to apply the numerical method to physiology, and this attempt alone merits notice.

Dr. Robinson, although agreeable to the fashion of his day, he considered

\* *Essai de Physique Sociale*, p. 50.

† *A Treatise of the Animal Economy*. Dublin, 1732.



mathematical reasoning as the soundest basis for a physiology of animal bodies, did not despise or neglect the proofs by experiments.

"I took," says he,\* "the pulses in a minute, and measured the lengths of a great number of bodies. I took the pulses when the bodies were sitting, that they all might be situated alike with respect to the horizon; and in the morning before breakfast, that their hearts might be as free as possible from the influences of all disturbing causes; and when I had got a very large stock of observations, I took the means of the pulses." But unfortunately he has not published the tables of observations,—a great neglect in an original observer, thus rendering it impossible for future experimenters to verify his observations. Instead of this he says that he found those means "to be nearly as the biquadrate roots of the cubes of the lengths of the bodies inversely." Language of this kind has happily disappeared from most modern physiological works.

Dr. Robinson does, however, give one table to show the near agreement of the pulses from observation with the pulses by the theory.

TABLE I.

<i>Ages in years.</i>	<i>Length in males.</i>	<i>Pulse from observation before breakfast, and sitting.</i>			<i>Pulse by theory.</i>
	72	.	65	.	65
	68	.	67	.	68
	60	.	72	.	74
14	55	.	77	.	79
12	51	.	82	.	84
9	46	.	90	.	91
6	42	.	97	.	97
3	35	.	113	.	111
2	32	.	120	.	119
1	28	.	126	.	132
$\frac{1}{2}$	25	.	137	.	144
0	18	.	150	.	184

But the most important conclusions arrived at by Dr. Robinson, seem to me to have been drawn from the following series of observations.

TABLE II.

	Morning.							Mean.	Afternoon.											Mean.
Hours.	8	9	10	11	12	1	2		3	4	5	6	7	8	9	10	11			
Pulse of A.	65	67	70	73	71	69	70	70	77	77	77	77	76	76	74	74	76	76		
Pulse of B.	66	71	72	68	69	67	67	68½	75	81	84	81	79	77	78	78	79	78		

This table contains "the number of pulses in a minute of two healthy men, A and B, when sitting from eight in the morning to eleven at night. These numbers are means drawn from a large number of observations; those of A from the observations of twelve weeks; those of B from the observations of three weeks. A eat his breakfast between nine and ten, B his before nine; they both dined together at two. B eat more plentifully than A, and they eat little or no supper."

The conclusions Dr. Robinson drew from this series of observations were, that the pulse is slower in the morning than at any other time of the day. The imperfect nature of the details unfortunately renders the table of little use. It is not stated for example how the persons were employed through the course of the day, whether writing, reading, or actively engaged in business. Neither the temperature nor the season of the year have been noted, nor the kind of food, and more especially what drinks were taken. The constant increase of pulse from two to eleven P. M. argues a constant stimulation from some cause or other. Now that cause is not stated.

\* A Treatise of the Animal Economy, Dublin, 1732, p. 132.

Dr. Robinson was aware of the influence of the mind over the pulse, and the power of exercise to quicken the pulse. "A strong extension of the legs and arms by the power of the will has quickened the pulse twenty beats in a minute, and at the same time made it so low that it could scarcely be felt." This implied, according to my views, that the person was unwell. I know not why modern observers have endeavoured to keep out of view, that the very slightest muscular exertion quickens the pulse; even the action of writing does this to a very great extent; sitting upright, instead of leaning on a desk or table, quickens the pulse; the keeping the spine erect, or allowing it to lean forward, affects it in the same way. These facts will be explained more fully afterwards.

He even seems to have endeavoured to ascertain the ratio of pulse produced by exercise. "The pulses in a minute (he observes) of a man, lying, sitting, standing, walking, at the rate of two miles in an hour, at the rate of four miles in an hour, and running as fast as he could, were 64, 68, 78, 100, 140, and 150 or more." "When a body stands up (he observes) the pulse begins to grow quicker the very instant the body begins to rise."

From this remark, coupled with numerous others to the same tenor throughout Dr. Robinson's work, it may be gathered with how little truth, the title of "discoverer of the human differential pulse," can be given to Drs. Macdonell, Sanders, or to any other modern observer.\* Indeed, nothing can be clearer than Dr. Robinson's announcement of these discoveries on the pulse. He attempted to measure the effects, which the deprivation of air to the lungs has on the pulse; he experimented on dogs, to ascertain the fact, and observed in himself that on emptying his lungs of air as much as he could, and then stopping his breath, the pulse became small and quick, with a kind of trembling convulsive motion, in less than half a minute of time.

Finally, he compared the number of pulsations and inspirations together, and considered them to be in a minute, as follows:

Pulses,	65	72	116
Inspiration,	17	19	30

From these data I venture to draw the following conclusions:

1st, That Dr. Bryan Robinson was the discoverer of the "differential pulse in man;" that he described it perfectly, and ascribed it to its real cause.

2dly, That he appreciated correctly enough the influence of food, and other disturbing causes of the heart's action, but that he knew nothing of the precise nature of the laws regulating these actions, not having submitted them to any statistical inquiry.

3dly, He first suspected and proved indisputably, that from birth to adult age, the rapidity of the pulse constantly declines, and he has given an accurate statistical table to prove this.

4thly, He endeavoured to show by the same numerical method that the rapidity of the pulse was inversely as the height of the person; or, to give an example, let A be five feet, and let B be six feet, then the pulse of A is to that of B as 72 to 65. But this table is not carefully drawn up, and the conclusions are not legitimate.

5thly, He suspected a diurnal movement in the rapidity of the pulse; viz. that it decreased during sleep, and increased from morning until night. With these and several other of his conclusions, I do not agree. We do not here discuss the accuracy or legitimacy of Dr. Robinson's conclusions generally, but simply whether or not he was aware of the existence of certain laws respecting the physiology of the pulse, and of the influence of certain disturbing causes. Now nothing is clearer than that he was quite aware of these circumstances.

Lastly, He attempted to ascertain statistically the effects of muscular motion

\* Transactions of the British Association in Dublin, 1835.

on the pulse *in health*; the ratio of the pulsations to the inspirations and the immediate result on the heart's action, of a temporary deprivation of air.\*

With reference to any progress made in this inquiry from Robinson's time to my own, I feel a delicacy in making any critical observations. When I published my observations in the *Edinburgh Medical and Surgical Journal*, I was quite aware that Dr. Sanders had published a work on Consumption of the Lungs, in which the fact of the differential pulse was stated, and the action of various drugs experimented on with a view to the confirmation of certain theoretical views held by the author of that work, with a reference more especially to the therapeutic effects of foxglove: nor was I aware until reading the proceedings of the British Association held in Dublin, that Dr. Macdonell claimed,† in opposition to the counter claims of Dr. Sanders, a discovery, which in no shape belonged to either, viz. the discovery of the differential pulse, belonging exclusively to Dr. Bryan Robinson.

Of any other facts or discoveries published by either of these gentlemen, I am not aware, but shall be most happy to give them a full acknowledgment on their being pointed out to me.

The physiological history of the human pulse presents a number of questions well meriting a solution. In this section it is proposed to analyze the facts accumulated by various observers.

## PART II.

The question of an average pulse for any particular age can only be put, at least in this form, by those ignorant to a great extent of the physiology of the pulse. Systematic writers on physiology, by stating such questions and replying to them, display a desire to satisfy the general reader at the expense of truth. The pulse varies every hour of the day and night, and after every meal; it is extensively influenced by merely rising from the sitting to the erect posture; and how, under these circumstances, any one can arrive at an average pulse, it is somewhat difficult to imagine. What can be more vague and more unsatisfactory than the following table; what so unlike correct physiology!

TABLE I.

Average of the Human Pulse at different ages according to

BRYAN ROBINSON.

Age.	Length in inches.	Pulse.
At birth, -	18 -	150
$\frac{1}{2}$ year, -	25 -	137
1 -	28 -	126
2 years, -	32 -	120
3 -	35 -	113
6 -	42 -	97
9 -	46 -	90
12 -	51 -	82
14 -	55 -	77
	60 -	72
	68 -	67
	72 -	65

\* Some observations were made on the pulse subsequent to those of Robinson, by Falconer and Hewson, but I have failed in procuring the works.

† Dublin Medical Journal, No. 22.

TABLE II.

MAGNANIE.		ELLIOTSON, last edition.		MAYO.	
		Before birth,	128		
At birth,	130 to 140			At birth,	140
1 year,	120 to 130	At 1 year,	124	Of 1 year,	120
2 years,	100 to 110	2 years,	110		From 100 to 110
3	90 to 100	When the first teeth			
7	85 to 90	drop out,	86		
14	80 to 85	At puberty,	80		80
Adult age,	75 to 80	At manhood,	75	Adult from 70 to 75	
First old age,	65 to 75	Old age, about	60		60
Confirmed do.	60 to 65	Scarcely found it twice alike.			

It is curious to observe that the oldest writer is not only more minute, but approaches perhaps nearest to the truth.

Such tables as the above are mere copies of each other, and in respect to them I would make the following remarks.

No mention is made how these averages were struck, or if the numbers were drawn from averages at all. I do not believe that they were. We are left to guess, 1st, at what time of the day the pulse was noted, and if in all the individuals at the same time of day; 2dly, in male or female; 3dly, sitting, lying, or standing; 4thly, before or after meals; 5thly, morning, noon, or night; 6thly, whether sleeping or waking.

I hope there is no person who, on considering these remarks carefully, will venture to say that such tables are of any use. It were easy to add to these tables others precisely similar of other compilers, such as Rochoux, Adelon, &c., tending, however, to no other result than that of proving the fact of their having rigorously copied each other.

A little reflection clearly shows that there can be no such thing as an average pulse, unless counted under circumstances precisely similar in all the individuals experimented on; and even then we should only obtain the average for that particular hour and time of day. This would be an average pulse in a certain sense. In the absence, however, of such data, the practical utility of which I question, there still are some, imperfect as they are, which merit attention.

First, M. Paul Dubois makes the pulsations of the fetal heart to be from 140 to 150, and very often 144.

But it is a remarkable fact, that, in order to arrive at even an attempt at a fair average, we are forced to go back to Dr. Robinson's Treatise, written nearly a hundred years ago, and find it to contain the only approach at an analysis of this subject. He gives in table second the average pulse of two men at every hour of the day, (whilst sitting) from 8 A. M. until 11 P. M. taken for several weeks; the mean of these waking hours was, for A 76; for B 78. But still there is a meagreness of detail and a narrowness of observation, rendering it impossible to base on such observations any important conclusion.

The midday pulse of 25 young gentlemen, taken between the hours of 12 and 2, in July 1836, was as follows:—

TABLE III.

No.		Age.	Height.	Pulse Sitting.	Pulse Standing.
1	H.	21	5 feet 5½ inch.	66	64
2	H.	22	5 7	74	82
3	R.	27	6 1½	70	76
4	H.	18	5 6	69	72
	G.	19	6 0	56	56
	M.G.	18	5 5	74	76
	S.	20	5 7½	68	74
	W.	20	5 10	82	82
5	T.	17	6 0	96	96

No.		Age.	Height.	Pulse Sitting.	Pulse Standing.
10	E.	17	5 feet 5½ inch.	61	70
11	H.	20	5 0	68	68
12	W.	20	5 5	60	72
13	W.	20	5 8	86	84
14	S.	22	5 6	68	76
15	D.	18	5 8	76	82
16	F.	22	5 3½	66	68
17	W.	19	5 6	64	64
18	C.	18	5 9	84	92
19	K.	39	5 11	66	74
20	B.	24	5 11	52	56
21	T.	20	5 11½	69	81
22	D.	17	5 7	84	86
23	S.	22	5 10	82	82
24	M.D.	16	5 8	80	80
25	O.	29	5 10½	70	72
Mean of ages,		25	Mean Pulse Sitting,	72.4	Standing, 75.4

This table discloses some curious facts in the history of the pulse. So far as could be determined, all these young gentlemen were in good health, with one exception, and yet we find two, in whom the pulse constantly decreased on rising from their seat, and became accelerated on sitting down; being the very reverse of a law, which all physiologists had thought to be universal.

Besides these two in whom the pulse showed so singular a character, there were six others who had no differential pulse, that is, in whom the muscular action required to maintain the body erect did not accelerate the pulse a single beat. It is needless, I hope, to tell the Society that these observations were made with the greatest attention to accuracy.

M. Billard's observations on the pulse of infants were, without doubt, carefully performed, and as infants are less likely to be affected than adults by position, food, &c., they furnish, I think, data to determine the usual rate of the infantile pulse.

In forty-one infants from one to ten days old, and all in good health, the pulse was

In 18 less than	80	In 1 less than	130
2	80	2	145
1	89	2	150
4	100	1	180
10	110 to 129		

In 36 children from 1 to 2 months.

14 from	80 to 85	5 from	110 to 112
1	60 to 62	2	114
2	90	7	125 to 130
2	94 to 95	3	140-147 to 150

In 30 children from 2 to 3 months.

14 more than	90	2 more than	70
2	100	2	70 to 80

M. Quetelet gives the average pulse of eighteen boys, and the same number of girls at birth, as follows:—

	Max.	Min.	Med.
Boys,	165	104	136
Girls,	165	108	135

I have endeavoured to determine the rate of pulsations of the heart in children of different ages, and under different circumstances, as to food, sleep, &c., not so much with a view to any general average of their pulse, as to ascertain if they obeyed the same laws as the adult pulse, but found them too variable to

lead to any decided result. I give the following tables, however, as they may be useful to future observers.

TABLE IV.

1st October 1835.			common fare, a little porter and kippered salmon, meat and broth.		
Age 7	116	9 A. M. immediately after breakfast.	Age 7	92	
9	100		43 R. K.	78	
5	124		9	90	8 P. M. after very moderate exercise.
43	75		5	96	
9	88	12 noon.	7	96	
7	92		43	70	
5	110		9	92	9 P. M. no exercise.
43 R. K.	67		7	93	
2d October 1835.			43	63	
7	112	10 A. M. after breakfast.	8 P. M. 13th September.		
8	112		7	94	
9	116		9	98	
43	74		43	64	
28th September.			$\frac{1}{2}$ past 4 after dinner		
9	100	1 P. M.	9	103	
7	98		7	97	
43	64		43	67	
After exercise for two hours.			5	98	
9	100	3 P. M. before dinner.	9	82	8 P. M.
7	100		7	90	
43	64		43	58	
9	101	5 P. M. immediately after dinner,			

Messrs. Leuret and Matinie, in their inquiries to determine the average rate of pulsation in the insane, of both sexes, furnish us with some data for the determination of an average pulse at a certain hour of the day. I shall say nothing at present of the result they arrived at respecting the supposed greater quickness of the pulse in the aged than in those of middle age, reserving this topic for consideration in an after part of this memoir.

TABLE V.\*

Alienes,	10 Men	Morning 75	Evening 75
Non alien,	12 do.	do. 68	do. 66
Alienes,	7 Women	Morning 75	Evening 79
Non alien,	6 do.	do. 81	do. 75

These are the data that I am acquainted with in respect to the question of an average pulse.

## PART III.

But there are numerous circumstances in the physiological history of the pulse which better merit consideration. These I shall consider in the following order.

1. Is there, or is there not, a "diurnal revolution" of the pulse in respect merely to numbers, independent of stimulation by food or exercise? Now I fancy that this has been completely proved in my first memoir, published more than twenty years ago. But some have asserted that this morning acceleration and evening retardation depends altogether on the use of food and other stimulants, and that, were it not for these, the pulse would not rise early in the morn-

\* See Leuret et Mativie.

ing, and fall towards evening, but would sink constantly. This opinion is altogether incorrect, so that no more need be said about it.

Table showing the differential pulse; observed in Mr. S. aged 20, morning and evening, proving a diurnal revolution, both as to numbers, and as to excitability, altogether independent of food or exercise, and proving the morning pulse to be quicker than the evening one.

TABLE VI.

<i>Date.</i>	<i>Hour.</i>	<i>Horizontal.</i>	<i>Sitting.</i>	<i>Standing.</i>	<i>Differential.</i>
April.					
5	10 P. M.	53	64	78	25
6	7 A. M.	60	75	90	30
7	7 A. M.	65	80	90	25
8	10 P. M.	57	66	78	21
9	7 A. M.	65	80	90	25
10	10 A. M.	60	82	95	35
	10 P. M.	58	70	76	18

Average differential Pulse.

Morning, 28.7 Evening, 21.3

	<i>Horizontal.</i>	<i>Sitting.</i>	<i>Standing.</i>
Average morning pulse,	62	78.3	90
Average evening pulse,	56	67	77

The apartments occupied by Mr. S. (a gentleman of the most regular habits and in excellent health,) seemed to me cold, and exposed to the boisterous westerly winds of this climate. I have no doubt that the temperature of the room had fallen greatly during the night, otherwise the difference between the morning and evening pulse would have been still more marked.

The morning pulse was of course noted before breakfast.

Without doubt, were we to continue long without food, the pulse would first sink, and then become exceedingly quick on the slightest excitement. No one doubts this; but that the morning pulse is quicker than the evening one, altogether independent of any stimulants, is proved I think beyond a doubt, by these and other tables.

The next question, which is a more important one in many respects, is as to the existence of a diurnal revolution in the excitability of the heart; by this I mean a varying susceptibility according to the time of day for a healthy powerful action of the heart, when influenced by food, exercise, &c.

The numerous observations detailed throughout this paper, and in my former memoir, published in 1814-15, may, it is hoped, settle this question with unprejudiced persons. The excitability of the heart diminishes regularly from an early hour until late in the evening. Indeed, I have reason to think that, since the publication of my first memoir in 1815, few have doubted this fact, and I beg leave therefore to refer at once to that memoir.

It is extremely difficult to reckon accurately the usual number of inspirations and expirations of any individual, inasmuch as whenever the mind becomes directed to the respiratory act, it never fails to alter it and render it measured, as if almost voluntary; nevertheless, the researches of that most accurate and ingenious philosopher, M. Quetelet, merit attention.

From observations made on women he constructed the following:

TABLE VII.

<i>Ages.</i>	<i>Pulsations.</i>	<i>Inspirations.</i>
0	135	44
15 to 20	78	19
20 to 25	77	17
25 to 30	72	
30 to 50	74.5*	19

\* An error of the press, I imagine, for 71.45.

TABLE VIII.

	<i>Pulsations.</i>			<i>Inspirations.</i>		
	<i>Max.</i>	<i>Min.</i>	<i>Med.</i>			
In 18 boys at birth,	165	114	116	70	23	44
18 girls at birth,	165	108	115	68	27	44

In 300 males of different ages.

<i>Ages.</i>	<i>Pulsations.</i>			<i>Inspirations.</i>		
	<i>Max.</i>	<i>Min.</i>	<i>Med.</i>	<i>Max.</i>	<i>Min.</i>	<i>Med.</i>
0	165	104	136	70	23	44
5	100	73	88	32		26
10 to 15	98	60	78			
15 to 20	90	57	69.5	24	16	20
20 to 25	98	61	69.7	24	14	18.7
25 to 30	90	59	71	21	15	16
30 to 50	112	56	70	23	11	18.1

M. Quetelet thinks that sleep affects both the pulsations of the heart, and respiration, in corroboration of which he gives the following

TABLE X.

<i>Ages.</i>	<i>Pulsations.</i>			<i>Inspirations.</i>		
	<i>Awake.</i>	<i>Asleep.</i>	<i>Rel.</i>	<i>Awake.</i>	<i>Asleep.</i>	<i>Rel.</i>
Girl from 3 to 4	102.3	92	1.11	30.2	24.8	1.22
Boy, 4 to 5	93.4	77.3	1.21	29.3	21.5	1.36
Woman, 26 to 27	77.5	67	1.16	27.0	20.8	1.30

But I can nowhere find in the valuable works of M. Quetelet, that he was aware of the effects of position on the pulse; or of its diurnal revolution, or of the diurnal change in its excitability, and this lessens, I regret to say, the otherwise entire confidence I and all others would be disposed to place in the results arrived at by this profound and ingenious philosopher. In the tables, for example, constructed to determine the influence of sleep on the pulse and respiration, compared with the waking state, no mention is made of the time of day or night, nor of the position of the person whilst awake, whether horizontal, sitting, or standing upright. The pulsation of the person sleeping would, in all probability, be reckoned in the evening at a time when the pulse sinks naturally altogether independent of sleep.

Again he found, that in a male child from four to five years old,

The pulsations whilst asleep were	77.3
Inspirations,	24.5
Whilst awake,	
Pulsations,	93.4
Inspirations,	29.3

In the construction of these tables, two great data have been neglected, viz. the position of the person, and the time of the day.

If the pulsations and inspirations were reckoned during the night as an index of the effects of sleep, then the effects of the time of day are mistaken for the effects of sleep; for at midnight the pulse numerically is low in a healthy and stout person, whether asleep or not, and the excitability of the heart is nearly at its zero. Again, the pulse would be counted at one time whilst the person was in a horizontal position, and at another time whilst sitting or even standing. This would also make a difference of ten or twelve beats, which M. Quetelet has not taken into account. I question much if any effects arise from sleep, excepting of a very trivial nature; but restlessness and watchfulness, arising from any cause when the body ought to sleep and requires it, would produce a highly excited pulse, the result of weakness and temporary ailment.



In this climate the temperature of our rooms often sinks very much during winter, and especially towards the morning;\* with the temperature the pulse sinks, and this may be one cause why, as I have just remarked, some have doubted the fact of the pulse being quicker in the morning than towards evening. Haller, it is said, doubted this, but, beyond all question, he was wrong. The greater excitability of the morning and forenoon pulse, over that of the afternoon and evening one, has never been questioned, since first proved by me, so far as I know.

The effects of a cold room in depressing the pulse is such that even the active exercise of writing fails to counteract it.

The following table shows that the pulse remained much depressed under circumstances in which it ought to have risen very much.

TABLE XI.

1st December.	2 A. M. in bed,	-	-	-	60
	5 A. M. sitting and writing for some hours,	-	-	-	60
	There was no fire in the room.				
	6 A. M. still writing,	-	-	-	62
	7 A. M. ditto.	-	-	-	60

Here the pulse ought, but for the cold room, to have risen very much, for the action of writing raises the pulse considerably; that of composition still more. Those whose minds are much occupied with business are not *fair* subjects for experiments on the pulse.

The use or abuse of wine and spirituous liquors renders all observations on the pulse inaccurate. These liquors in my opinion, are purely medicinal. Their daily or even frequent use in any climate, or in any quantity, I apprehend to be a great error in regimen, and can never be required. I think them directly opposed to the enjoyment of perfect health and strength.

The restlessness of children, the powerful influence of their mind over the heart's action, and their liability to slight ailments, render observations, in respect to their pulse, of little moment. I made at least one hundred carefully noted observations on the pulses of four young persons of different ages, varying from four to ten, and this was the conclusion I drew; that in children of these ages the irregularities of the pulse, proceeding from numerous causes, renders all observations in respect to them of little or no value. I reserve the tables in case they should be afterwards required to prove these conclusions, but their publication at the present moment I consider of no importance. They gave me more trouble than all the rest of the inquiry. One fact was evident, viz. the younger the person the quicker the pulse.

The following is an average table showing the rate of pulsation in four young persons at 4 P. M. and before dinner.

<i>Ages.</i>	<i>Position.</i>	<i>Pulse.</i>	
9	Sitting	94	27th December, day mild and raining.
7		102	
5		108	
3		108	

\* The thermometer being seldom above 61 or 62 of Fahr., even with a strong fire in the room. I hope it is unnecessary to remark to any medical person that, if he sits before a strong fire, his pulse will rise almost at any time, and that if he sits still in a cold room until his feet feel as if frozen, his pulse will sink proportionally; hence if possible all observations on the pulse ought to be made in summer. I attribute to an inattention to the fact of the coldness of apartments in this country generally during the night and towards morning, why some have thought that there is no diurnal revolution of the pulse as to its numbers, independent of stimulation by food and otherwise; or, in other words, that the pulse will not accelerate towards morning spontaneously.

Table showing the pulsations of the same young persons (after dinner) at 6 P. M.

Ages.	Position.	Pulse.
9	Sitting	96
7		106
5		116
3		120

TABLE XII.

Observations made by Mr. S., aged 20; height, 6 feet; quite healthy, and of most regular habits.

Date. 1836.	In bed.	Sitting and writing 9 A. M.	Sitting at lecture 11 A. M.	Stand- ing 1 P. M.	Sitting at lecture 3 P. M.	Sitting at home.				
						5 P. M.	7 P. M.	9 P. M.	11 P. M.	
Mar. 7	14,	63	110	86	90	78	86	85	63	62
	15,	57	111	80	86	73	70	85	75	77
	16,	63	108	90	82	76	66	80	74	60
	17,	60	104	74	80	76	72	90	76	64
	18,	60	100	72	85	74	68	74	72	60
	19,	68	72	100	100	78	68	83	72	60
	20,	58	76	85	78	80	96	88	68	72
	21,	60	92	84	72	68	75	90	75	88
	22,	54	100	78	80	72	68	84	68	58
	23,	56	100	85	84	72	64	72	66	62
	24,	54	96	66	70	69	76	80	71	66
	25,	58	106	75	82	70	78	78	68	58
	26,	60	80	100	95	85	80	86	78	66
	27,	58	70	72	88	75	68	75	74	68
<hr/>										
Average, 58.5*		94.6	82.6	83	74.9	72.9	73.6	71.6	65.78	

REMARKS.—During these observations the meals were,

Breakfast, (coffee) 7½ A. M.

Dinner, - 5½ P. M.

Coffee, - 8½ P. M.

Neither wine, spirits, nor malt liquors were used.

To determine the effects of exercise on the pulse I made the following observations.

TABLE XIII.

Showing the rate of sinking of the pulse after walking a mile in a quarter of an hour, counted after intervals of five minutes.

After 1st 5 minutes,	2d do.	3d do.	4th do.	5th do.	6th do.	7th do.
105	93	90	88	88	88	88

Table.—Rate of sinking of the pulse, counted at intervals of five minutes, after walking four miles in one hour.

90	85	70	80	75	77	75
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TABLE XIV.

Showing the rate of sinking of the pulse at intervals of five minutes, after walking one mile in ten minutes.

After 1st 5 minutes,	2d do.	3d do.	4th do.	5th do.	6th do.	7th do.	8th do.
124	110	100	100	98	97	90	90

These observations were made for me by a young gentleman, (Mr. S.) muscular, and seemingly quite healthy.

\* The average morning pulse sitting was 78.3. This was deduced from other observations.

Exercise quickens the pulse more in the young than in the aged. Walking at the same rate with a young friend of half my age, I found our pulses to be in the following ratio :

TABLE XV.

	<i>Age.</i>	<i>Pulse.</i>	<i>Pulse.</i>	<i>Pulse.</i>	<i>Pulse.</i>
R. K.	42	92	94	104	77
H. R.	19	113	130	130	94

The pulsations were counted at intervals, during a walk of twenty miles, at four miles an hour. Both stood whilst the pulse was reckoned. Towards five p. m. I felt more fatigued than he did, and my pulse showed, by an increased elevation, the effects of debility: R. K. 110; H. R. 117. When the pulse quickens unnaturally on exercise it is a sign of debility.

The following table contains the result of a series of observations made during the course of a day, in which, though only twenty-two miles were walked, the fatigue felt towards the close of the day was very considerable.

The table shows,

1st, The effects of exercise when well, and when debilitated by over fatigue.

2d, The rate of sinking of the pulse during the day.

3d, The great rapidity of the pulse occasioned by debility. It proves that exercise should constantly stop on this side fatigue; when pushed too far, the heart's action changes, and fever to a certain extent is kindled up. Debility, therefore, induced by great fatigue, quickens the pulse. Thus, whenever, walking is pushed beyond the strength of the individual, the rapid increase in the number of the pulse becomes a measure of the increasing exhaustion: it, in fact, more resembles febrile than healthy excitement.

TABLE XVI.

	<i>Standing.</i>	<i>Sitting.</i>
9 A. M. before breakfast,	72	64
10 A. M. after ditto,	76	70
11 A. M. having walked two miles at the rate of four per hour,		
the pulse being counted immediately on sitting, first half minute	53	99
second do.	60	
From the 4th to the fifth minute	91	
Noon.—After four miles more at the same rate, counted by half minutes;		
Sitting 1st minute,	-	45
		41—86
do. 3d do.	-	82
do. 7th do.	-	81
do. 11th do.	-	76
do. 15th do.	-	76
Half past one.—After other four miles at the same rate.		
Standing, first half minute,	52	98
second minute,	46	
sixth do.	90	
eleventh do.	88	
fifteenth do.	86	
Half past two, after other three miles at the same rate.		
First half minute,		58
Second do.		53
		111
20 minutes past 3, after other four miles at the same rate.		
First half minute,		64
Second do.		56
		120
6 P. M. After four miles, making in all twenty-two; the latter were performed slowly, the fatigue felt being very great,	-	Standing, 119
In twenty minutes lying on a sofa, it fell to		72
But at half past nine P. M. sitting, it was still		76

*General conclusions.*—It is certainly much safer for the reader to draw from the foregoing tables and observations whatever conclusions he may think fit, or that he thinks the data will bear out; but least it be said that I have come to no conclusion, (which those are apt to say who have not patience to think for themselves,) I shall venture a few, begging it, however, to be distinctly understood that the observations may themselves warrant quite different ones.

1. The velocity of the heart's action is in the direct ratio of the age of the individual, being quickest in young persons, slowest in the aged. There may be exceptions to this, but they do not affect the general law.

2. There are no data to determine the question of an average pulse for all ages.

3. There is a morning acceleration and an evening retardation in the number of the pulsation of the heart, independent of any stimulation by food, &c.

4. The excitability of the heart undergoes a daily revolution; that is, food and exercise most affect the heart's action in the morning and during the forenoon, least in the afternoon, and least of all in the evening. Hence we should infer that the pernicious use of spiritous liquors must be greatly aggravated in those who drink before dinner.

5. Sleep does not farther affect the heart's action than by a cessation of all voluntary motion, and by a recumbent position.

6. In weak persons, muscular action excites the action of the heart more powerfully than in strong and healthy individuals; but this does not apply to other stimulants, to wine, for example, or to spiritous liquors.

7. The effects of the position of the body in increasing or diminishing the number of pulsations is solely attributable to the muscular exertion required to maintain the body in the sitting or erect position; the debility may be measured by altering the position of the person from a recumbent to the sitting or to the erect position.

8. The law of the differential pulse is not universal. There are exceptions to be found even in those in perfect health. It is also possible that there may be some in whom the diurnal revolutions of the pulse takes place only in consequence of the use of stimulants. But this has not been proved satisfactorily.

9. The most powerful stimulant to the heart's action is muscular exertion. The febrile pulse never equals this.

10. The law of relation between inspiration and the pulsation of the heart has been stated by M. Quetelet.

*Note on the foregoing Memoir by the Editors.*

Though the Editors of the Edinburgh Medical and Surgical Journal cannot answer for the accuracy of the facts and statements made, or the correctness of the conclusions deduced, in the papers inserted, and must allow them to rest on the character of the authors, yet, in circumstances in which statements made are liable to lead to mistake, they always conceive it to be their duty to rectify the error.

In page 330, in the foregoing paper on the pulse by Dr. Knox, it is stated that "some observations were made on the pulse subsequent to those of Robinson by Falconer and Hewson." This statement, it is requisite to say, is erroneous. In no part of the writings of Mr. Hewson are there any observations on the pulse, or on its changes; and the readers of this Journal will search there in vain for any information on this subject. The first and second part of the *Inquiries on the Blood*, and on the *Anatomy and Physiology of the Lymphatic System*, were published by the author himself,—the former in 1771, and again in 1772 and 1780, and the latter in 1774. Mr. Hewson died on the 1st of May 1774, before he had published the third part of the *Inquiries*, containing observations on the *Red Particles of the Blood*, the *Structure and Uses of the Lymphatic Glands*, the *Structure and Uses of the Thymus Gland*, and the *Structure and Uses of the Spleen*. The publication of this third part was accordingly undertaken and completed in 1777, by the friend of Mr. Hewson, Mr. Magnus Falconer, a teacher of Anatomy in London, who for some time succeeded Mr.

Hewson in that occupation. In no part of this volume will the reader find any information on the pulse or its variations.

It is proper, however, to mention, that nearly twenty years after the publication of the third part of Mr. Hewson's *Inquiries* by Mr. Magnus Falconer, viz. in 1796, Dr. William Falconer, of Bath, a gentleman quite different, and who had already distinguished himself by his writings on the Bath Waters, the Influence of Climate on Mankind, and the Influence of the Passions on Diseases, published a series of very excellent and instructive observations on the pulse, "intended," he informs us, "to point out with greater certainty the indications which it signifies, especially on feverish complaints." In this treatise, besides a short view of what had been accomplished on this subject by previous inquirers, as Sir John Floyer, Senac, Dr. Bryan Robinson, Haller, and Heberden, Dr. Falconer takes a view of the influence exerted on the pulse by the circumstances of sex, temperament, stature, time of life, and period of the day; rest or activity; external temperature, and food or abstinence; endeavours to fix the standard or natural pulse in the adult, which he is disposed, from various circumstances, to place at 75; and concludes with several important considerations on the changes which the pulse undergoes in various states of disease.

To the volume is appended a series of tables, the use of which is to determine, in any given case of natural or standard pulse during health, the increase in the number of beats within a given time, which it is likely to undergo during the presence of disease, especially of febrile characters.

Of this work, which is not rare, there are two copies in the College Library, two in the Library of the Royal Medical Society, and one in that of the Royal College of Physicians.\*—*Edin. Med. and Surg. Journal.*

*An Examination of Phrenology; in two Lectures, delivered to the Students of the Columbia College, District of Columbia, February.*

By THOMAS SEWALL, M. D., Professor of Anatomy and Physiology. Washington City. 1837. pp. 70; with eight Plates.

WHATEVER may be thought of the philosophy of these two lectures by Dr. Sewall, there can be but one opinion respecting the style and manner in which they are written. In these latter respects, they form a marked contrast with the canting abuse of phrenology which characterized the production of a New York physician, whose errors and uncharitableness we thought proper to expose and rebuke in a former number of this Journal.

The first lecture of Dr. Sewall is a succinct account of the origin and progress of the phrenological labours of Doctors Gall and Spurzheim, and a brief statement of their philosophy of mind in connexion with the structure and development of the brain. To the zeal, intelligence, and acquirements of these individuals, he bears, it would seem, not unwilling testimony: nor is he backward in speaking of the various merits of others of the phrenological school; as when he says, "Mr. Combe, of Edinburgh, is scarcely surpassed for the beauty of his style, his command of facts, the richness and facility of his illustrations, as well as for philosophical observation." Our own country, adds the lecturer, is not destitute of men of ability and high literary attainments, who give all their influence to the support of phrenology.

\* Observations respecting the Pulse; intended to point out with greater certainty the indications which it signifies; especially in feverish complaints. By W. Falconer, M. D., F. R. S., Physician to the General Hospital, Bath. London, 1796.

So far the lecturer has contented himself with stating the case, as lawyers would term it. But in his second lecture, he comes out unequivocally as adverse counsel; and whilst citing evidence in support of his argument, he indulges, we think, in some special, and may we not add, unsuccessful pleading.

His first count, in the impeachment of phrenology, is, that it is not sustained by the structure and organization of the brain. This allegation must be advanced merely *ad captandum*, and to influence the general reader and the tyro in physiology. Where, we would ask the lecturer, is our belief of the function of any part of the nervous system, or of any of the external senses sustained or confirmed by structure and organization. There is, indeed, an obvious mechanism in the eye and ear for the transmission of light, and of the vibrations of the air; but who, after the most careful inspection and longest study of the retina, could have declared, *a priori*, that it was excitable by the stimulus of light, and of light alone, as far as regards impression on it, being followed by the sensation of colours, form, &c. Who could have declared, from the most minute examination of the portio mollis and its branches separated from the labyrinth, that it and it alone conveyed the impressions which give rise, on reaching the brain, to the sensation of sounds? Even now that we are assured of this correspondence between these nervous expansions and their specific excitors, can we yet detect or explain the fact, by any peculiarity of structure or organization, indicative of primary intention on the part of the great Architect.

If our knowledge of function depended on an evident relation between it and organization, why was physiology not enriched, long before the present age, by a knowledge of the fact of the double property of the spinal nerves. That each one of those has a double root, and that the posterior is longer and marked by an enlargement or ganglion, has been long known. Monro described this arrangement, and depicted it in his plates of the nervous system now before us. But neither he nor any other anatomist conversant with the fact, was led to infer, from structure and organization, a twofold property in the double root, nor the possession of sensibility by the posterior or ganglionic, and of motility by the anterior. Do we derive any support from the structure and organization of the portio dura and of the fifth nerve, in elucidation of the different functions performed by them. Or could all the aids in the use of the scalpel, the microscope and chemical reagents teach us, *a priori*, the difference in function between the larger and chief or ganglionic portion of the fifth, or that for common sensation to all parts of the face, and the smaller muscular branch which goes to the lower jaw. Yet more—Wherein were we guided to the discovery, and now that the discovery is made, wherein are our convictions a whit strengthened, by any peculiarity of structure and organization in the gustatory branch of the fifth nerve or that of special sensation, different from the other branches or those of general sensation?

Dr. Sewall, in continuation of this part of his argument, repeats the often alleged objection to the existence of the phrenological organs, in their not being distinctly marked, nor indeed separated by any visible boundary. On the same ground, he ought to deny the existence of the two tracts on each side of the spinal marrow, which possess each a different property, because it is impossible to see or to draw any evident line of demarcation between the anterior or

motor and the posterior or sensitive tract. These two portions of spinal marrow are as continuous and blended with each other as are the phrenological organs in the cerebrum; and yet, the properties or functions of the former are not more diverse than those of any two contiguous ones of the latter. And again,—there is uninterrupted continuity of white nervous fibres from the medulla spinalis, through the medulla oblongata, on to the cerebellum and cerebrum. But no anatomist or physiologist will be found to contend for similarity of function in all these divisions of the cerebro-spinal axis, or to deny a marked difference of function, because there is not corresponding difference of structure.

It would puzzle, we believe, the most skilful anatomist and accurate microscopical observer to point out any line or boundary between that portion of the Schneiderian membrane, which is supplied by a branch of the fifth nerve, and is the recipient of stimulants provoking common sensation, and that other and upper portion, which derives its sensibility from the olfactory nerves, and is in consequence the seat of special sensation. Neither the eye alone, nor the eye aided by the microscope, can enable us to indicate where the surface of the mucous membrane lining the mouth and digestive canal ceases to impart the sensations of touch, and of heat and cold. Still more wonderful, and if we were to adopt Dr. Sewall's mode of reasoning, incredible, are the differences in function of the several divisions of the gastro-intestinal cavity, especially of the stomach, the duodenum and other small intestines, and the colon—continuous as are these one with another, and performing their respective offices through the medium of a membrane (the mucous) which exhibits, throughout, no differences adequate to enable us to tell, *à priori*, the changes of the alimentary matter in its passage over it. Surely, the most enthusiastic anatomist will not pretend to say, that the stomach gives evidence in its "structure and organization" of the part which it performs in digestion! Neither this nor any other function has been discovered by the peculiar structure of the organ on which it depends. All have been ascertained by observation; by noting the relation between the stimulants and excitors of the organ itself, and not by any evident relation between the structure or mechanism of the organ and its function. It is true, that, the function once ascertained, we can then see, in some instances, as in the mechanism of the heart, the direction of its valves, and of the valves of the veins, the adaptation of organization to function. But even in this case, clear and evident as are the organic arrangements, they did not, of themselves, if at all, prompt or guide to a discovery of the office for which they were intended.

The first inquiry, therefore, of Dr. Sewall—"How far phrenology is sustained by the structure and organization of the brain?" may be answered by saying: just as far as any part of physiology is similarly sustained. If we are content to believe in the functions of the other organs without this kind of evidence, we need not be sceptical in regard to those of the brain.

But the function of an organ once known, we can predicate, in general, from the quantity of specific tissue or structure of the latter, the power of the former. And this axiom overlooked by Dr. Sewall, is the best answer to his denial of the fact, that there is any established relation between the volume of the brain and the powers of the mind. The contractility of a muscle is in proportion to the quantity of fibrinous matter of which it consists, and its motive power is in proportion to its size—not adventitious size, by intervening adipose and cellular

tissue, or by infiltrations in them, but true bulk, made up of a deposit of fibrin. The larger a healthy heart, that is to say, the more it abounds in muscular fibres, themselves made up mainly of fibrin, the more powerful is its expulsive and propelling action, and the greater its energy as the central and chief organ of the circulation. So, also, of the function of the liver, as measured by the amount of its secreted fluid: it will be greater the larger is the organ, and the more bulky its peculiar parenchyma, and the more numerous its acini. Size when caused by disease ceases to be a measure, as where there is a fatty degeneration of the liver, or where the growth is of the cellular tissue intervening between the vessels and the acini and excretory ducts, or where this tissue is partially infiltrated with serous fluid.

The brain is no exception to this physiological axiom. This organ consists of a deposition of neurine enveloped by membrane, and copiously supplied with blood. Its laws of nutrition are the same as those of other organs; its activity and stages of function will be found to correspond with its periods of development and its size. We suppose now that we are addressing those who believe that the brain is the material instrument of the mind, without reference to specification of organs, whose functions consist in the performance of special faculties. If the brain be this grand instrument, we would ask wherein consists its peculiarity of structure and organization for this purpose, if not in the deposition of neurine, and the fibrous arrangement of the latter. The convolutions and ventricles are secondary modifications of structure, by which greater volume and expansion of surface are secured in the same space.

We only invoke the application of admitted physiological laws, when we affirm that the brain must, like every other organ, in order to discharge its appropriate functions, have acquired a completeness of growth and a development, measured not only by the harmonious relations of its several parts and outlines, but also by the internal or interstitial deposit of its peculiar distinctive element. The greater its size, provided always this depend on the abundance of its peculiar element, the more apt and powerful will be the display of its functions; just as the larger the muscle and the more abundant its fibrinous part, the greater is its motive power. As we cannot believe otherwise, than that there is a direct and positive relation between function and the matter and organic arrangement of the brain, so neither can we understand why there should be increase of this matter without increase of power of the function; unless we were to suppose that there is a superfluity of organ, and a waste of skill in the great Architect. Not only would this waste be exemplified in the needless quantity of brain, but in the needless extent of membranes and capacity of bony case for its investment and protection, if a large brain had no more power than a small one. It is not thus that we find *his* intention expressed, or rather marred, in the laws of structure and function in the organs of the body at large; and hence we have no right from any abundant zeal with which we may be actuated, to impute to him imperfection in the case of the brain, the more especially, when we would profess at the same time to glorify him, by denouncing certain doctrines as favouring materialism and fatalism.

When speaking of the size of an organ, it will have been seen that we were careful to specify a size maintained by a healthy growth of its peculiar structure, and a deposition of its peculiar element; and not on the enlargement of common tissue, or an adventitious deposit between its fibres. Size in health is indicative



of the actual amount of organized matter, and the latter is again of the completeness of functional effects to be obtained from it. In disease, the size of an organ may and often does depend on other conditions; some, and the chief of which, have been already mentioned. In this case, as where we see a large and dropsical brain, for example, size is not an evidence of power and strength of mind; any more than the muscles of the limbs, large by infiltration, would be of strength and activity of locomotive power.

But it will be asked, are there not different degrees of density and amount of structure in the same bulk, all of them compatible with health? May there not, for example, be two masses of brain, or of muscles of equal size, and yet of different degrees of power? To a certain extent this may be; as where the fibrin of that muscular tissue or the neurine of the nervous, is more abundantly divided by lax cellular tissue. On these known differences rests the doctrine of the temperaments. The bodies of some persons are distinguished by a predominance of the white fluids and vessels, and of the cellular and adipose tissues; whilst those of others are characterised by a greater proportion of red blood and fibrin both in this fluid and in the muscles; and some again, with this activity of the blood-vessel system, will have a large allowance, also, of neurine, with little intervening cellular matter; consequently, an excess of the nervous system. We must be careful, however, on this point, not to confound power with its readiness to be called into action or its habitual activity. A man of large and massive frame of trunk and limb, may be, as he often is, slow and heavy in his movements of locomotion, and averse to undertake any labour or feat requiring a display of strength, which another of less size of muscles even would readily engage in. But if once the former be roused, goaded as it were to action, he will manifest prodigious activity and strength, such as the latter cannot by any means equal. The power was possessed but not used, and hence its existence was perhaps denied. Size, here, is still the criterion of strength.

In like manner, a person of lymphatic temperament, with little activity of circulation, but possessing a large brain, may be often heavy, lumbering as it were, in the process of thought and expression of ideas; but there is still an evident vigour of thought, and rectitude of judgment, which will inspire more confidence in a discerning observer, than the quick resolve, plausible common-places of ideas and fluency of speech of a more excitable person, who has a smaller cerebral structure. Let the first be roused, as we sometimes see really to occur, by some strong incentive, and the latent powers are rendered evident, and show themselves in great ingenuity, a forcible and convincing logic and out-pouring of language, which startle even those who had long known and thought they had formed a due estimate of his mind.

In the above instances, whether it have been of muscular or mental strength, we venture to say, that the power on which the manifestation depended, will be found to be the result or inevitable concomitant of size and quantity of the peculiar and specific matter of the organ, be it either fibrin for the muscle, or neurine for the brain. And all allowances made for temperaments and the relative activity of function dependent on this cause, size will still be the criterion.

Phrenologists cannot be accused of needless refinement, still less subterfuge, in admitting the modifications of activity caused by temperaments, when Dr. Sewall, for example, points out how much the same individual differs from

himself in the two states of repose and excitement. That two men with brains of equal size and identical development, the one of a lymphatic, the other of a sanguine, temperament should differ in the readiness of mental manifestations to the degree that one is slow, halting, and uncertain in the delivery of his opinions, and the other quick, connected, and pointed, is no contradiction to the principles of phrenology, unless it were shown that full time being given to the former to express himself quietly, deliberately, and maturely, he is found to fall short of the other in the force of his reasoning, and the variety and abundance of his proofs and illustrations.

Not more contrasted are these two persons than the two states of brain and mind of the same individuals, as thus related by Dr. Sewall in his second lecture.

"The late William Pinckney of Maryland, whose extraordinary power in debate is universally known, when unexcited, exhibited nothing in his appearance which manifested great activity and energy of mind; but when roused by debate, his face became suffused with blood, his eye sparkling and animated, his carotids pulsed violently, his jugular veins became swollen, and every thing indicated that the blood was carried to the head with an impetus, proportioned to the excitement of the occasion, and his intellectual effort; and it was only during this cerebral orgasm, that his thoughts were poured forth with that fluency and power for which he was so remarkably distinguished." The same phenomena occurred to some extent in his private studies, whenever he fixed his mind intently on any subject for the purpose of deep investigation."

Changes, similar to the above, are experienced by nearly every man of any vigour of mind, when summoned to unwonted exertion, whether it be in public or at his own desk. But it will hardly be alleged by Dr. Sewall, that Mr. Pinckney when excited acquired mental faculties other than those possessed by Mr. Pinckney when tranquil and passive, any more than that Hercules engaged in one of his labours, can be supposed to have acquired more muscular power than he possessed when leaning quietly on his club. The faculties in the first case, and the power in the second, were constantly present; they were intimately associated with organization; but they were only *manifested*, or called into *active display* under some strong excitement. It cannot be contended that the more active circulation of blood in the brain, and its greater determination to this part are the cause of new talents or of genius; since no proportion exists between the frequency of the former and a display of the latter. Were it so, every man in a furious passion would forthwith become a powerful reasoner, a fluent speaker, a poet, or a mathematician; and the exploded rhapsodies of poetry in favour of cerebral stimulation by intoxicating liquors, might once more obtain currency and credence. The true cause and support of mental power is the organic structure; the amount of the former corresponding with the mass and density of the latter. But the primary conditions and occasional means of giving activity to the power are various. Among the chief conditions are temperament,—among the occasions, the incentives furnished by necessity, imitation, a desire to excel and govern, &c. The brains of some men are habitually in the state of orgasm which Mr. Pinckney's brain is represented by Dr. Sewall to have occasionally exhibited; whilst those of others are habitually and uniformly as quiet and relatively passive as Mr. P.'s was in common. The lecturer in confounding power with activity and manifestation, is led to assert, that "there is something which

gives power to the mind, which has no connexion with the volume of the brain;" but if a power can be thus indefinitely augmented, independently of and without increased volume, where was the necessity for any volume at all or matter on which the volume depends, in order that power should have been originally possessed. That which can be indefinitely extended without any increase of its common material adjunct and associate may, undoubtedly, be maintained at its common and average degree without this latter at all; and if we were to push the inference from Dr. Sewall's assertion, it would be, that a man may have a very respectable mind and be a passable philosopher, although destitute of brain, or with a monkey's allowance, just to save appearances.

In the second lecture, page 43, it is said:—"The doctrine, therefore, that man owes his intellectual superiority to an excess of brain, deserves no support from his comparison with the lower animals." The "therefore" in this sentence is the expression of an inference drawn by Dr. Sewall, after a table furnished by Cuvier, in which it is shown, that the proportion of the volume of the brain to that of the body, is not greater in man than in many animals. We were not aware that this kind of comparison was received as a standard, or test by either phrenologists or any other class of physiologists. Gall has distinctly stated its inapplicableness. The introduction by the lecturer of the name of Sommering, might have suggested another standard adopted by this distinguished writer in his examination of the subject. It is the relative proportion between the nerves connected with the brain and this organ itself. If we divide the brain into two parts, we have, 1. That which is immediately connected with the sensorial extremities of the nerves which receives their impression, and is therefore devoted to those common wants and purposes which we partake with animals. 2. That which includes the rest of the brain, and which may be considered as connecting the functions of the nerves with the faculties of the mind. In the greater proportionate volume of this second part, or of the brain proper, man is decidedly preëminent. There is, we believe, in fact, but one opinion among the physiologists who have taken the most pains to investigate the subject in all its bearings. It is, that the cerebral hemispheres are, proportionately to the rest of the encephalic mass, more developed in man than in other animals, and that these are the material instruments, the organs of the mental faculties. By development is understood not only the mass of the brain, but the number and distinctness and consequently greater surface of the convolutions. In the constant proportion of the volume of the cerebral lobes to the degree of intelligence of the animals, comparative anatomy, says Cuvier, offers another confirmation.

The distinction to be made between the brain proper and its base or the field of the nerves, in estimating the truth of the proposition, that man owes his superiority to his greater relative cerebral development, seems to have been overlooked by Dr. Sewall, and indeed by most of the opponents of phrenology. For the correct appreciation of a corollary from this proposition, that one man is superior to another in intellectual capacity, in virtue of his greater volume of brain, it must be remembered that intellect and mind are not synonymous terms having even analogous meanings. To say, in general, that mind, with all its attributes, including propensities and sentiments, (passions and emotions,) and intellect, is powerful in proportion to the volume of the head, is, we believe, a truth. But it would not be correct to assume this same proposition for a part of the mind, the intellect, which can only apply to the whole.

The length of our remarks on the first two questions put by Dr. Sewall, will require of us to be more brief in our notice of the remaining ones. The third is, "How far is it possible to ascertain the volume of the brain in the living subject by measurement or observation?" The difficulties in the way of our success on this matter, are urged by the lecturer with some force:—though with no great novelty. The general proposition, that the skull is formed on, and takes the shape of the brain, has been so fully enforced and proved by various physiologists, especially by Gall, Spurzheim, Magendie, Vimont, &c., that we need not here enlarge on or enforce it by additional authority or argument. The experimental observations of Vimont were prosecuted for many years, in direct reference both to pure phrenology as well as to craniology. He had accumulated a vast collection of skulls and casts of the brain, both of the human subject and of animals, and the result was a conviction on his part of the truth of the doctrines into which he had been inquiring.

Doctor Sewall tells us, that "in childhood the integuments of the head, and the walls of the cranium, are thin and delicate; in the adult they are thicker, but in old age they are again diminished in thickness." Less difficulty will, of course, be experienced in ascertaining the size and relative development of the contained brain in young persons; the very class in whose favour it is most desirable to exercise craniological tact, and to make the application of the doctrines of phrenology.

The lecturer adds, that "there is often a great diversity in the thickness of integuments and the skull in different persons of the same age, sex, and condition, and of which we have no means of judging in the living subject." In the plates which accompany the lectures, we are presented with specimens of these differences, some of which are, indeed, sufficiently striking; but by whom, we would ask, has this fact been more pointedly stated, and examined in all its bearings, than by Dr. Gall himself, in his large work\*—in which he indicates the modifications both of outline, figure, and substance to which the skull is subjected by the brain, before birth, from infancy to adult age, in certain diseases, as in hydrocephalus, mental alienation, &c. This distinguished physiologist points out, also, the primary differences in the figure of the brain and cranium, and examines the question whether the form of the head can be modified either during the progress of delivery, or subsequently by forced compressions, and into the effects on the figure of the skull by the development of particular portions of the brain. He, also, fully anticipated, and indeed stated with more fulness and distinctness than his contemporaries and successors, the objections depending on the occasional want of parallelism of the two plates of the cranium, especially at the frontal sinuses, and the consequent embarrassment in external or cranioscopical examinations.

Respecting the varying thickness of the skull, Dr. Gall distinctly tells us, that the extent of duration may be from two lines, its customary measure, to one inch. But then he shows, what Dr. Sewall has omitted to do, that the increase in thickness was, except in the case of old persons, usually morbid, and more especially evident in those afflicted with insanity and imbecility of some duration. The bones of the cranium acquired at the same time an ivory hardness.

\* *Sur les Fonctions du Cerveau et sur Celles de Chacune de ses Parties, etc.* Paris, 1825. Tomes VI.

This state has been seen to exist on one side alone of the cranium. In hydrocephalus, in which the brain is so much enlarged in volume, though not increased in mass, the cranium becomes of an extreme thinness, sometimes equal to parchment.

From the whole tenor of these observations, we infer the obvious dependence of the skull, in its configuration, on the brain, and that it is moulded on this latter; becoming, in certain diseases, thickened by the recession of the inner table, so as to be kept in apposition with a diminished, shrunken, or atrophied brain; and in other cases extremely thin by the absorption of the bony tissue from the continued pressure of the cerebral mass beneath. The principle, therefore, of the correspondence between the form of the outer surface of the brain and of that of the outer surface of the cranium, must be considered to be fully established. The causes of embarrassment to the craniological examiner in the few cases of exception above mentioned, are but additional illustrations of the principle itself.

It will hardly be contended by Dr. Sewall, that the instances of very thick crania, such as in the case of the young female whom he mentions, and in the skulls sent by Dr. Smith of Baltimore, are frequently met with, or that they are not exceptions to the average, which is much thinner. Putting aside, therefore, the exceptions depending upon old age and disease, in which we are either not called upon to make any cranioscopic investigation, or if we should be, we can appreciate and make allowances for the probably increased thickness of the skull, there remains only the difficulty from want of parallelism in certain parts, as the frontal sinuses and the crucial ridge; and from there being a small space below the median line at the summit of the skull, in which runs the longitudinal sinus, and which is not filled up with brain.

The objections from these causes would be insurmountable, if the phrenologist pretended to ascertain from the configuration and fulness of the skull the nicer degrees of development of each convolution of the brain. It is only the more distinct protuberances from which Gall himself drew any inference respecting the cerebral development beneath, and the strength of the faculty depending in this latter. And although the skull in several persons may be of the same thickness, and this much greater than natural, a careful observer cannot fail to perceive marked differences in the relative fulness of certain regions—a fulness resulting from the different degrees of development of the brain beneath. The same remark applies to the alleged concealment of the organs by the extent and thickness of the temporal muscle. Even the eye can hardly be deceived by this interposed muscular investment, so as to fail to see the varied degrees of protuberance of the subjacent skull. Still less is it probable that the sense of touch would be unable to determine what is muscular and what bony development. If there were any uniform proportion between the muscularity of an individual, and especially between the thickness of the temporal muscle and the fulness of the skull at the regions covered by it, then would there be some force in the objections urged on this ground by Dr. Sewall. But he must have seen frequently notable protuberances on each side of the head corresponding with the location of the different phrenological organs which he enumerates, and at the same time very little muscular development.

Even in the regions in which, from causes already enumerated, as at the summit of the head in the line of the sagittal suture, the brain is not in close apposition with the internal surface of the skull, and at the external angle of the eye,

and above the superciliary ridge where there is a want of parallelism, Gall was able to detect, and to show to others, notable protuberances in certain subjects, which could only have resulted from the development of the portions of brain beneath. In such persons, there was found an unequivocal manifestation of the faculty or faculties indicated by these protuberances.

As the author of the lectures seems to assume that anatomical authority is opposed to phrenology, and intimates that an acquaintance with the former will make us sceptical in regard to the latter, we will just quote, while we think of it, the very modest remarks in a late work on the Human Brain, in which, to a knowledge of what has been said and written on this subject, the author, Mr. Solly, adds his own careful observations and dissections. He describes and gives plates of the nervous system of the inferior animals, and of the brains of the different classes, up to man, and scrutinises with care and caution the accounts of functions attributed to its different parts.

"The whole subject of phrenology appears to me," says Mr. Solly, "of far too much importance to be discussed without the most rigid and impartial examination of the immense body of facts adduced in support of it; and this I have not hitherto had leisure to undertake. I shall therefore only say that, so far as I am acquainted with the subject, I do not see it as otherwise than rational, and perfectly consistent with all that is known of the functions of the nervous system."

We have now to notice a pervading error in all Dr. Sewall's reasonings on the subject of phrenology, as indeed in those of most of the opponents of the science. It is, to regard the brain as a unit, the whole of which "is concerned in each and every operation of the mind." This position being assumed, though it is that which phrenologists have more completely subverted than, perhaps, any other of the metaphysical dogmas of the schools,—great surprise is naturally expressed, that persons with brains of equal mass and volume should exhibit such marked differences in their mental faculties; and the fact has been adduced in disproof of the doctrines of phrenology. The true state of the case, argued phrenologically, is, 1st, That the brain is a congeries of organs, each of which performs a special function, manifested by the exercise of a particular faculty of the mind. 2d, That the mental faculties are numerous, and of disproportionate power and activity. The larger the mass of which the congeries consists, the more powerful is the mind, made up as this latter is of all the faculties collectively. What holds true of the whole is applicable to each of its parts, and hence the larger a single organ the more powerful is its corresponding faculty. It is obvious, however, that without specification of region and organ, or organs, an annunciation of the size of the brain can give us no definite idea of the predisposition to particular modes of action or thought, or of the mental qualities in general. Thus, to tell us that a man has a large brain, simply assures us that he has certain mental faculties powerful; but whether these belong to the propensities, the lower faculties of our nature—or to the sentiments, and thus make the man a creature of strong, often passionate impulses, and of varied emotions, we cannot say. He may or may not be remarkable for either vigour or variety of intellectual faculties. The intellect, although the nobler part of the mind, has a smaller portion of brain for its organic support than the other divisions of the mental faculties; and hence it may be defective, and yet the size of the brain relatively large. On the other hand, when we learn that a person has a small brain, we cannot, simply from this announcement, tell whether he is deficient in, or remarkable for intelligence. A large head, with fully

proportioned development in all the regions anterior as well as posterior, leaves us in no doubt of the powers of the mind of its possessor, and of his being endowed with both strong intellect, and strong feelings; of his being, in fact, a man of excellent contradictory parts. But a large head, with a deficiency anteriorly, gives no promise of power, on the contrary, to the phrenologist it is evidence of deficiency of intellect. On the other hand, the collection of organs on which the exercise of the intellectual faculties depends, may be present, and the organs of other faculties in small development; and here will be a man with a small head remarkable, perhaps, for his intellect. It is no argument against the function of the anterior lobes, through the instrumentality of which the intellectual faculties are, according to Phrenology, displayed, to allege that an individual distinguished for the variety and extent of his 'native talent' had an uncommonly small brain—unless we had been informed at the same time, that, with the variety and extent of his native talent, he had also been noted for the power and energetic display of all the faculties which are represented by the phrenologists to depend on the middle and posterior lobes of the cerebrum and the cerebellum. Had we been told that the individual, cited by Dr. Warren as thus distinguished, had at the same time a notable deficiency in the development of the anterior part of his cerebrum, we should have had more cause of wonderment, and for agreeing with Dr. W. and Dr. Sewall, that this fact furnishes an objection to Phrenology.

The remark by Dr. Sewall, therefore, that "If we look around upon the intellectual world, we shall find as many men distinguished for intellectual power with a head of small or medium size, and as many with a large head possessing a feeble intellect, as the reverse of these," is entirely without point, and inapplicable for his purposes. Its truth is not adverse to phrenology; it is rather a strong confirmation of the doctrines of this science. But to those who believe in the unity of the brain it must appear to be a manifest absurdity, unless they deny that this part is at all necessary for thought and sentiment. What! that an instrument whether it be large or small, closely knit together in its several parts, or loosely joined (a dense or a lax fibrous structure), is equally fit for the offices, simple or complex, which it is known to fulfil.

Dr. Sewall, whilst he admits "that there is a difference in the natural capacities of men," is equally clear that this difference is utterly insignificant, compared with what is impressed upon the mind by circumstances.

"The influence of climate, occupation, literature, science, and the arts, commerce, war, civil and religious institutions, the state of society, and the modes of life, all exert a powerful influence upon the human intellect; but, above all, it is the discipline of the mind which gives it power."

No one can deny the power of circumstances; but it is not so great as the lecturer affirms it to be. A seed will not germinate without the "circumstances" of heat and moisture; and a plant will not bring forth leaves, flowers, and fruits, without the added circumstance of light. But we believe it will be difficult, by any possible combination of circumstances, to make a barren seed germinate, or to cause a pumpkin seed to grow into a pomegranate tree, or a cucumber seed shoot up into Indian corn. And yet, to our mind, these events would not be more strange than if, by all the circumstances enumerated, certain brains could be made to perform the higher intellectual functions, and enable their possessors to manifest genius and invention. Did "circumstances" cause the

differences between the Egyptians and the Greeks, or between the Ionian Greeks and their Asiatic neighbours. In later times, wherein were the circumstances through which the followers of Mahomet from Arabia, the conquerors of Egypt, Mauritana, and Spain, so soon felt the humanizing influence of letters, and extended their cultivation and that of the arts and sciences far beyond any other people of their time; whilst the Turks, with the same religion, also conquerors of Asia Minor, Egypt, and the remains of the Greek empire, persisted in barbarism, and up to this day are encamped, as it were, on the fairest portion of Europe, alien to her letters, her arts of usefulness and ornament, and her sciences. Are there not some other than the circumstances, either mentioned or meant by the lecturer, which can explain these differences? Need we go farther, or can we go beyond the innate differences of mental constitution and capacity.

The whole history of genius is a continued refutation of the dogma of circumstances alone, or mainly, causing the differences between men in their intellectual manifestations. Where were the fostering influences of climate and situation, or the encouragement of friends and the patronage of the great, under which Linnæus the Swede began and pursued his botanical studies, and acquired an enduring reputation in all the branches of natural history? Was it a favourable combination of circumstances by which Columbus, in opposition to the opinions of the learned, and amidst the coldness and indifference of princes and rulers, discovered this continent? Was Franklin indebted to circumstances for his distinction as a natural philosopher, and the reputation and influence as a politician and political economist, which he acquired in both Europe and America? But why need we multiply examples, which are nearly as numerous as the names of men of genius.

When a youth leaves his paternal farm, perhaps cot, and becomes one of the busy throng of a city in which he is a stranger, unknown, unbefriended, without wealth, or any aid or appliance but the conviction of his own powers, and works his way to honours and fame in a learned profession or in the legislative hall, can he be said to be the favourite of circumstances?

Dr. Sewall tells us—"The intellectual, like the physical functions, acquire strength by use; and he who would attain to eminence must subject himself to the habit of long-continued and close application to study, to deep and systematic reflection, severe investigation, and accurate analysis. These give a vigor to the mind that nature never imparts." With much truth there is mixed up no little fallacy in these opinions. The lecturer has forgotten that the greatest geniuses have ever been among the most devoted students. No obstacle has withheld them from their darling study and pursuit. Out of the wildest confusion around them, they have methodized their labours, and undisturbed even by the din and tumult of war, they have continued their calculations and experiments. They but gratify, in so doing, a craving of their nature, a thirst for knowledge, which, though constantly ministered to, is never satiated. The mere student from imitation or vanity may accumulate a large and not unprofitable store; but unless he be quickened by genius, it will be of comparatively little avail for great and noble ends. Newton has had many to equal him in "the habit of long-continued and close application to study, to deep and systematic reflection, severe investigation, and accurate analysis." His genius impelled him to this course: others, in a spirit of imitation, and from a sense of duty, followed it; but with what result the annals of science will show. Milton gratified his powerful mind by



deep and various study : he was a poet and a student—a student rather because he was a poet, than a poet because he was a student. According to Dr. Sewall's opinion, labour imparts genius, but not genius impels to labour. Two of the most celebrated painters of Italy, Michael Angelo and Leonardo da Vinci, and men of the greatest genius in their art, were also the most persevering students, and noted for their varied attainments. Study and attainments were here, as in the other instances mentioned, but effects, and not, as Dr. Sewall would imply, causes of their intellectual vigor and inventive faculty. Were it otherwise, every academy of art and school of science should furnish, by its mere discipline and the intentness of some of their students, a Michael Angelo and a Newton.

If men of the greatest genius have ever been among the most indefatigable students, the fact must be received as an acknowledgment of the importance, nay, absolute necessity, of diligence and labour for the accomplishment of great ends. No distinction in literature, science, or the arts was ever yet attained without the individual submitting to these indispensable conditions. With some more happily gifted it is a labour of love, with others of duty ; but in all there must be a continued straining to reach the goal of their hopes and their ambition.

We find, indeed, every now and then, a particular faculty in early and active exercise, with comparatively little labour or education. This fact, itself, is sufficient proof of the innate power, and separate action and plurality of the faculties of the mind. But their display, isolatedly, will seldom be productive of very varied or beneficial effects, or redound much to the honour of their possessor, without study, meditation, and frequent trials.

Dr. Sewall says : "The individual who exclusively cultivates his memory, acquires a faculty of retaining facts to an extent inconceivable to those who neglect this faculty." Here is another specimen of the vagueness and inaccuracy of thought and expression into which the followers of the old school of philosophy are continually led, in treating of the mind and its attributes. Memory is not a faculty ; but a modification, a mode of exercise of a faculty. There are as many kinds or varieties of memory as there are of the intellectual faculties. One person exhibits a great facility in remembering and repeating the words of a speaker or author, no matter on what subject ; but often with hardly any understanding of its nature or merits. Another remembers places and objects, or a landscape which he has once seen, but has no memory for mere words. A third again remembers all the combinations of figures and calculations of a difficult problem in mathematics, whilst he cannot bear in mind any details of description of men or things, of history or poetry. One man will have a most tenacious memory for every thing connected with painting, whilst another will be equally retentive of musical combinations and details ; and neither of the two, by any effort of intellect, shall be able to acquire the knowledge, or display the kind of memory, of the other.

It may be alleged that, in these cases, the strength of memory is proportionate to the exclusive direction of the mind, and its intentness on one subject or series. But it will be found that the direction and intentness are the effect of the strength of a particular faculty, which naturally seeks for, or impels its possessor to seek for, its gratification, and which enables him to remember best that which gave him most pleasure.

Similar comments might be made on the remarks of the lecturer which follow the above extract, touching the success of a metaphysician who principally ex-

erouses his understanding, in arriving at a power of analysis — fancy being checked causes a neglect of judgment, &c.

An argument frequently urged in support of Phrenology, is the success with which its principles have been applied to practice, in distinguishing character. To this Dr. Sewall replies, by alleging, that the same manifestations of mind, as in crime, for example, cannot grow out of the same or one unit cerebral development; “men,” says he, “of the same natural propensities perpetrate different crimes, when placed under different circumstances.” Doubtless they do; and the admission of the fact is the best reply to those who argue against phrenology and craniology, because every murderer has not destructiveness large, and every thief acquisitiveness in excessive development. It is not the solitary crime that proclaims the character, or even the innate propensity, of the individual, so much as a series of crimes of the like nature, persisted in, often without apparent object or common motive — as where a man repeatedly commits murder in cold blood, or systematically robs without necessity and without regard to the application which he will make of his booty. In cases like these, we expect to find a correspondence between structure and function, between the cranial configuration and the mental manifestation. Where, also, the cerebral development and cranial configuration are very marked in a young person, we have reason to believe that he will be prone to acts constituting the range of the function of the organ, and that if he is not restrained by suitable education and the exercise of counteracting faculties, he will habitually indulge the dominant propensity.

We agree with Dr. Sewall, in exclaiming, “How preposterous, then, to look to the developments of the head as the measure of a man’s virtues and vices, or even to regard his known propensities and dispositions as the true index to the history of his life.” We do not, ourselves, know of any class of philosophers, phrenologists or others, who measure a man’s character by such signs, or who pretend to read in them his past history. A tendency to, does not imply actual indulgence in, crime or passion of any kind. A man may, and is often known to be naturally, or constitutionally as it is sometimes termed, impetuous, impatient, choleric, prone to extreme measures, even of a violent nature, but who, nevertheless, by early and successful appeals made to his sentiments of benevolence or of veneration, or both, or of conscientiousness (sense of justice), by the lessons and example of pure morality and religion, has succeeded in keeping his erring or evil nature in subjection. But the particular tone, or colouring as we might term it, of his character and disposition, dependent on the first mentioned causes, still remains, and can never be eradicated. Saul, at first the fierce and vindictive persecutor of the Christians, was subsequently, when enlightened and converted, and preaching and travelling as Saint Paul, still warm and impassioned, but in a different guise, and with far different objects. Let elders, presbyters, deacons, and even pastors in the churches, tell of their early lives, and of their early passions, and it will be found that a phrenologist who should say, from their cerebral developments, that they evinced certain tendencies to evil, or had, for example, combativeness, destructiveness, or acquisitiveness full, would not be accused by them of slander. But this person would not pretend to tell all their actual character and present conduct: any attempt to do so has been expressly disclaimed by Spurzheim, Combe, and all, we believe, of their school.

So, also, in regard to the intellectual faculties: — it has never been contended

that men are born painters, poets, or musicians, mathematicians or metaphysicians; nor that they have the organs of poetry, mathematics, &c. This is one of the exaggerations and fictions of anti-phrenologists. All that has been alleged by the advocates of innate faculties, and corresponding material instruments is, that there is in some men an original aptitude for seeing and seizing the relations of various objects in nature, and of so combining them as to produce results in science and the arts of a novel and striking character, which, under the same external circumstances, others differently organized could not by any effort or labour, however long and laborious, attain.

We shall conclude with introducing a sentence of Dr. Sewall's, respecting the writers on phrenology. Earnestly do we wish that we could, with sincerity, give a like favourable opinion of the labours and success of the writers on ethics and metaphysics, whose works are the most approved in our schools and colleges. If there is truth in their philosophy, it is yet entirely hidden from mortal ken: facts with them are not illustrations, nor are their illustrations facts.

"These writers [phrenologists] have intermingled with their doctrines so much of philosophy and truth, have introduced so many novel facts and illustrations, and have exhibited the whole subject in such an aspect, as to render the study exceedingly captivating."

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*A Discourse on some of the Diseases of the Knee Joint; delivered before the Massachusetts Medical Society, at their Annual Meeting, May 31, 1837. By GEORGE HAYWARD, M. D., Professor of the Principles of Surgery, and of Clinical Surgery, in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston, 1837.*

THE Discourses before the Massachusetts Medical Society, in their practical nature, contrast with those delivered nearer home, in which we preach a little too much ethics, and indulge more than is necessary in professional glorification. There may not, as Dr. Hayward admits of his Discourses, be much novelty of view or discovery in them; but the author, by giving a bold outline, and indicating the leading points of a subject, arrests the attention, and elicits farther inquiry and investigation on the part of his auditors and professional brethren generally.

Diseases of the Knee Joint, the theme chosen by Dr. Hayward, interest both by the frequency of their occurrence and the obscurity in which, to a certain extent, their pathology and treatment are still involved. "They are frequently insidious in their attack, and often obstinate in their character, producing sometimes permanent lameness, and occasionally terminating in loss of life and limb."

The complexity of structure of the parts composing the joint, is pointed out as an explanation of the cause of the difficulty of diagnosis, as well as of means of cure; but we do not, for ourselves, see the accuracy of the remark, "Three different tissues,—synovial membrane, cartilage, and bone, constitute an organization by no means relatively complex or unusual. Still there is no little difficulty in being able to say, from a minute inspection and dissection of the diseased parts after death, in which of the above tissues the first lesion was located, and in what order it was extended." Great praise is lavished on Sir Benjamin Brodie's "Observations on Diseases of the Joints;" and we will not say unjustly: but we do profess our inability to see clearly through the means of this author's glasses. From his own confession, the diagnosis of the disease of the several parts or tissues is not uniformly evident, nor is he successful in always elucidating it.

Following his model, Dr. Hayward treats of inflammations of the synovial

membrane, of the articulating cartilages, and of the bones. In the course of his description and suggestions, whatever of a practical nature he advances is, however, he informs us, the result of his own experience. Consisting entirely of continuous description of diseases and of treatment, in a terse style, it is not easy for us to give extracts from the Discourse, without disjoining them from other parts with which they were in close connexion. After describing the appearances, and other symptoms of acute inflammation of the synovial membrane, Dr. Hayward proceeds to notice the treatment. "This is," he tells us, "principally local — topical bleedings, and cold lotions to prevent suppuration;" but if this takes place, warm poultices and fomentations to be substituted for them. Somewhat contradictory to his first affirmative, is the remark almost immediately after, that in severe cases general bloodletting is sometimes necessary, and in every case purgatives are useful. Would it not be a safer guide, in laying down the treatment, to say that the general remedies should never be lost sight of, and that they should precede or accompany the topical ones.

We are told, "That where synovial inflammation is modified by syphilis, rheumatism, or gout, it is less severe than the worst species of the acute form of disease, and more so than that of the chronic. But it may also be added, that when thus modified, it is not likely to terminate in suppuration, and the consequent destruction of the joint."

The author points out a frequent and fruitful cause of failure in the treatment of this class of morbid affections, owing to the unwillingness of the patient to submit to the proper remedies, among which rest holds so prominent a place. When recommending in the subacute or chronic form of synovial inflammation, blisters after leeching or cupping, and preferably the latter, we are told, and we believe truly, that it will be better to let them heal, "and draw new ones, than to dress them with irritating applications. In this way they produce more effect on the disease, and less disturbance to the system."

Somewhat singular, as a distinctive title, is a division of his subject by Dr. Hayward, headed *Morbid Change of Structure of the Synovial Membrane*. Is not inflammation, while it lasts, and in its effects, a morbid change of structure? But we are told by the author, that the membrane in question undergoes a change of structure of a peculiar character, which is not found to take place in any other part of the body. "It consists of a deposition upon the membrane, and an alteration in its organization. This deposition is a pulpy, gelatinous mass, varying from the twelfth of an inch to an inch in thickness, in which may be seen white membranous lines. It is sometimes of a light grey colour, and at others of a reddish brown."

This disease attacks young persons about the age of puberty, and rarely those who have passed the middle age of life. Scrofulous patients are the most disposed to it. Its first symptoms are swelling and stiffness without pain; and the joint will sometimes remain stiff and swollen for many months, or even years, giving little or no pain to the patient. "The general health, however, is soon affected; abscesses form in the joint, the articulating cartilages ulcerate, and the ends of the bone become carious. The removal of the limb offers the only chance of saving life; in fact the operation is often necessary before the disease has gone so far."

As a "constitutional disease," great attention is recommended to be paid to the diet, and to the state of the bowels. Exercise in the open air is important if it can be taken without moving the limb. Mr. Scott recommends pressure

with great confidence, and M. Lisfranc moxa. From its affinity to scrofula, iodine, in some of its forms, would, Dr. Hayward thinks, be perhaps the best counter-irritant. For the same reason the internal use of this medicine might be advantageously tried.

*Ulceration of the Cartilages*, a third form of disease of the knee joint, is described: "It is apparent," says the author, "that this is a formidable disease, and remedies, unfortunately, have not the control over it that could be wished." Rest, insured by the application of a hollow splint from the foot to the nates, is recommended as all-important, and a means on which some surgeons have relied alone in the management of the early stages of some of these cases, and have not unfrequently been completely successful. Respecting counter-irritation, Dr. Hayward says:

"The moxa, and the actual cautery, are probably the best counter-irritants, as they certainly are the most powerful. The former I have used, but not the latter; principally from an apprehension that it might be difficult to limit its effects. My own experience has taught me, even when issues are to be made about the knee joint, to be cautious in the selection of the spot upon which they are to be placed. I once saw an abscess produced within the joint, which rendered amputation necessary, by the application of caustic directly over the capsular ligament.

"Whatever, therefore, be the agent that is employed, it is safest to apply it at some distance from the articulation, otherwise a degree of inflammation might be excited in the synovial membrane, that would essentially retard recovery, if it did not altogether prevent it."

The fourth division, is *The Disease of the Articulating Surfaces of the Bones of the Knee Joint*. To this, as to the last mentioned variety, persons predisposed to scrofula are most liable. It begins in the cancellous structure, which becomes more vascular, and contains a less proportion of earthy matter than in health. It most usually attacks children, and it is rarely met with after adult age. Changes of temperature, and exposure to cold and moisture, have a much greater agency in the production of this disease than external injury or sprain of the joint, to which it is often attributed.

"After the disease has continued for some length of time in the bone, it extends to all the neighbouring parts; the cellular and synovial membranes become thickened and diseased, the cartilages ulcerate, and an abscess, perhaps, forms in the joints. When the pus is discharged, either by a natural or artificial opening, a new suppuration may take place, and hectic fever terminate the life of the patient, unless it be saved by an operation. But even this is not always effectual; the system may have received so severe a shock from the disease, that it is unable to rally, and its powers sink under it."

Respecting the treatment of this distressing affection, Dr. Hayward thinks that it "must vary somewhat in different cases, though it should not be active in any. The general health should receive our principal attention; and it is doubtful, whether local means have the power of arresting or checking, to any extent, the complaint. The limb must be kept at rest, as motion is sure to aggravate the disease."

"Counter-irritation, which was formerly employed in this complaint, is now almost wholly laid aside." "Cold applications are among the best means to be used when the part is inflamed; if it becomes painful, fomentations should be employed, and mild poultices when pus is secreted. The abscesses should be allowed to open spontaneously; otherwise an undue degree of inflammation will sometimes come on.

"At this advanced period of the disease, an operation is usually required; but if recovery takes place, the limb will, in most cases, be stiff, and ankylosis cannot be accomplished, unless it be kept entirely at rest. Friction and passive motion cannot be safely used at any time."

Dr. Hayward terminates his description, by pointing out the term,—white-swelling—employed by Wiseman more than a hundred and fifty years ago, to designate the different diseases of the knee joint above mentioned. Since his time white-swelling has been used to include all those chronic swellings of the joints in which there was no discolouration of the skin, and which often terminated in the loss of the limb or life of the patient.

The preceding notice will convey a good notion of the Discourse of Dr. Hayward, which, without pretensions to novelty, well merits an extended circulation, for the useful hints which it conveys to the young practitioner, and the clear outline of the prominent features of an important disease and its varieties, in aid of the memory for the older and more experienced.

We have not thought it necessary to engage in a discussion on some of the mooted points of the subject, especially in its pathological relations, as, for example, whether we ought properly to speak of ulcerations of cartilages of the joints, when the ability of cartilages to take on inflammation at all is very questionable. In this latter view the expression of the French writers, *usure des cartilages*, is probably preferable to the one of ulceration, most current among English and American authors and teachers. In its practical bearings, inflammation of the joint, ending in pus, should indicate, according to some surgeons and pathologists, the propriety of letting the part alone, as we would a cold or indolent abscess, and allowing time for absorption, and perhaps ankylosis, rather than remove the limb by amputation.

Cruveilhier, on the subject of chronic inflammation of the joints, and of the part which each of the constituent tissues takes on occasion, distinctly affirms, that in nineteen out of twenty cases these articular diseases are nothing else but chronic inflammation of the synovial membrane; and that in the same proportion, even when the fibrous and cellular tissues contiguous to the joint have been implicated with the synovial, it is still this last which has preceded, and gives the dominant character to the disease.

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*Observations on the Anatomy and Physiology of the Capillary Blood-Vessels.* By ANDREW ALEXANDER, M. D., of Boston. Boston Medical and Surgical Journal. No. 18. Vol. xvi.

OUR own restricted space forbids the introduction entire of the curious observations, and the added speculations of Doctor Alexander, on the Anatomy and Physiology of the Capillary Blood-Vessels. But we need regret our inability the less, since they have already obtained place in a valuable Journal, and through it extensive circulation and perusal.

Doctor Alexander tells us, at the beginning of his paper, how he was led to the discovery of what he fully believes to be, the seriferous capillaries with the lateral pores which have been supposed by many physiologists to exist in all the true capillaries. It was about five years ago, (some time in the spring of 1832,) when Doctor A., one dark cloudy day, was observing very attentively a spider engaged in constructing its net in the window; and after he had lost sight of it, and remained gazing in vacancy, that he noticed some object apparently floating in the air near the glass of the window, in view of which a very dark cloud then happened to be. He noticed, however, that in whatever direction he moved his eye, the object moved with it; but that it, also, had a movement apparently independent of that of the eye, moving up or down from side to side,

though in the main it obeyed the motion of that organ. The narrative is thus continued :

"Placing a book, which I had in my hand, apparently between the object and the eye, I found that I could still see it, and that the nearer the book was placed to the eye, the smaller the object appeared; but that, what it lost in size, it gained in distinctness. Having closed one eye in order to determine whether I could see it with both eyes or with one only, I found that I could see it only with the right eye. I then imagined that it might possibly be some small body adhering to the eye-lids, eye-lashes, or cornea of that eye, and therefore endeavoured to dislodge it, by closing the eye-lids and rubbing them against the eye-ball. I found, however, on opening them, that the object was still visible. I then made use of a mirror, in order to discover by its aid if anything could be seen adhering to the eye. The object was not reflected by the mirror, but still it was visible, as while looking at the mirror I could see it apparently moving about on different parts of the reflected image of my face. I noticed that the object, which presented a bright luminous appearance, was perfectly transparent, as I could see, without the least obscurity, other minute objects through it, as the letters of a book. I then felt convinced that it must be in the eye itself. In adopting this opinion, however, I was at a loss to account for its moving apparently independently of the eye, and I did not find any explanation of this difficulty till some time after."

Doctor Alexander then states his slowness in coming to the conclusion which he ultimately did, viz., that he was the first to see *clearly* one of the much sought for seriferous capillaries, which appeared to him uniformly like an extremely minute tube of glass, or rather of the finest and most transparent isinglass pierced with lateral pores.

The discoverer soon ascertained that these vessels were to be seen equally well with both eyes. The same vessel, however, is never to be seen with both eyes; but by that alone in which it exists. The movement which these vessels appear to possess, independently of the eye, is not real, but only apparent; the deception being caused by our instinctively, and often altogether unconsciously, moving the eye in order to bring the object at which we are looking or wish to look under the axis of vision.

"To one particular vessel, however, the above remarks do not strictly apply; it does move independently of the whole globe of the eye; hence, though not always in the axis of vision, it frequently can be brought there, and I have on this account often been able to keep it steadily in view for an hour at a time. This is the first vessel I ever saw in this manner; it is quite large, and is distributed to some transparent moveable part of the eye, which I suppose to be floating quite loosely in the aqueous humour; it cannot be the iris, for that is not transparent. This vessel is capable of very free motion upon itself; it is sometimes folded upon itself, so as to occupy a very small space; it is the vessel I have most frequently seen, and as it is larger and more distinct than any of the others, it is the one I have most studied. I shall notice it more particularly while speaking of the physiology of the capillaries."

"The pores are seen placed at distinct intervals in the parietes of the vessels, in which they are distinguished by their form and superior brilliancy." The lateral pores are, says Dr. A., frequently seen, while the parietes of the vessels in which they are situated are invisible, except the little ring which forms the boundary of the pores.

"The seriferous capillaries have never been seen, until now, even by the aid of the most powerful microscopes. But it is not on account of their minuteness; the microscope renders visible objects far more minute than they are; it is on account of their transparency, of their want of colour, or their exactly agreeing in colour with the tissues to which they belong, of the want of colour of the

fluids circulating in them, of their intimate commixture and adhesion, and probable exact correspondence in texture with the parts in which they exist. They are seen, but cannot be distinguished.

"I have never seen any vessel in the transparent parts of the eyes which was not porous, except one, and that is a very large one in the left eye."

"As I did not at first perceive any vessels which gave off branches, I supposed that only the most minute capillaries penetrated the transparent parts of the eye, and that on that account they did not ramify; but after some time I discovered that this opinion was not well founded; the vessels even here differ perceptibly in size; I frequently see their ramifications forming a distinct and beautiful network, the different filaments of which appear to be all of equal diameter. They anastomose with extreme frequency with each other. They are very often seen as fine as the finest hairs, and even in these the lateral pores are distinctly visible."

"The capillaries are seen in the transparent parts of the eye by day light and by candle light. The greatest number of them is seen when the eye has been exposed to a bright light, or when we have been looking very intently at some object, and have afterwards permitted the pupil to become dilated by exposing the eye to a less brilliant light. By candle light I can see them by partly closing the eyelids and looking at the candle with one eye, so that the light is refracted in such a manner that the candle becomes invisible, though immediately in the sphere of vision, and only an irregular sheet of light is seen, upon which the vessels appear to be distributed. They of course partake of the colour of the light by which they are seen. They appear as if floating in the air at some distance from the eye. That distance may be varied by placing some body, as a book, in the sphere of vision, and gradually bringing it nearer the eye; they are then seen either upon, or nearer to the eye than, the body so placed. We may thus bring the image of the vessel as near as we please. When the vessels appear to be at a distance, they are seen greatly magnified. Thus I frequently see vessels which cannot exceed a few lines in length, or the finest hairs in diameter, as if they were a foot or even more in length, and a quarter of an inch in diameter; in this case, however, they are seen very indistinctly, and I prefer observing them when they are not nearly so much magnified."

"I do not depend for proof of the accuracy of my observation on my own experience alone. Others have seen the capillaries in the same manner as myself. One non-professional gentleman, in particular, remarkable for acuteness of observation, to whom I showed a drawing of one of these vessels, immediately recollected having seen something in his own eyes which he thought bore some resemblance to it; but having paid no particular attention to the subject, he could not speak with confidence. A few hours after, he told me that he saw something in one of his eyes which exactly corresponded to the vessel I had represented in the drawing, except that it had not the particular curve I had given it. I replied that that was not essential, and that the objects seen might be straight or curved, or in fact assume any form which the capillary vessels possess. Some days after, he told me the more attention he paid to these objects, the more he saw them, and even complained of their being troublesome to him, and expressed a fear lest their appearance should be the premonitory symptom of some disease of the eyes, as cataract, amaurosis, or the like."

We have now put our readers in possession of the curious facts and appearances described by Doctor Alexander, tending to prove the existence of seriferous capillaries in and visible by the eye of the observer himself. His remarks on the physiology of the capillaries, though by no means destitute of value or interest, are not distinguished by any feature which should demand our attention at this time. The entire article, which takes up a number of the *Boston Medical and Surgical Journal*, will fully repay the trouble of an attentive perusal. We recommend the ingenious author to continue in a course of careful observations and experiments, for which he seems to have the requisite patience.



## THE VIRGINIA SPRINGS.

We take blame to ourselves for not noticing sooner an "Account of the Medical Properties of the Grey Sulphur Springs, Virginia," prepared, we believe, by J. D. Legare, Esq., of Charleston, S. C. The object of the writer is to make known the chemical composition and medicinal virtues of the water of these Springs, and to show that we must add another to the long list of those already celebrated in the middle and south-western regions of Virginia; such as the Warm, Hot, Sweet, White Sulphur, Salt Sulphur, and Red Sulphur Springs.

"The Grey Sulphur Springs are situated near the line, dividing the counties of Giles and Monroe, Virginia; on the main road leading from the Court House of the one to that of the other. They are  $\frac{1}{2}$  of a mile from Peterstown, 9 miles from the Red Sulphur, and by the county road 20 $\frac{1}{2}$  miles from the Salt Sulphur Spring. In travelling to the Virginia Springs, by either the main Tennessee or Goodapur Gap roads, and crossing the country from Newbern by the stage road to the Sulphur Springs, the Grey Sulphur are first arrived at. They are 30 miles distant from Newbern. The location is such as will admit of many and varied improvements, which when completed will render this spot an elegant and desirable resort during the summer months, independent of the high medicinal properties of the mineral waters."

There are a hotel and two ranges of cabins, which give accommodations for from 80 to 100 visitors.

The following is the result of Professor C. U. Shepard's Analysis of the waters of the Grey Sulphur Springs:—Specific gravity, 1,003. *Soluble Ingredients*: nitrogen, hydro-sulphuric acid, bi-carbonate of soda,\* a super-carbonate of lime, chloride of calcium, chloride of sodium, sulphate of soda, an alkaline or earthy crenate or both, silicic acid. *Insoluble Ingredients*: sulphuret of iron, crenate of peroxide of iron, silicic acid, alumina, silicate of iron.

A synopsis of the medical virtues of the chief, or *Anti-Dyspeptic* Spring as it is called, is given, as follows:

"1. It relieves nausea and headaches, arising from disordered stomachs. 2. Neutralises acidity, and if taken at meals, or immediately after, it has a tendency to prevent those unpleasant sensations so often experienced by invalids from indiscretion in dieting. 3. Is an excellent tonic, exciting appetite and imparting strength to digestion. 4. Quiets irritation of the alimentary canal. 5. Controls and lessens the force of the circulation when unnaturally excited by disease, and often in this way is remedial in internal inflammation of the organs. 6. It tranquilizes nervous irritability. 7. Is a mild and certain expectorant, often allaying dyspnoea, and promoting recovery from chronic ailments of the chest or wind pipe. 8. It alters the action of the liver where this has been previously deranged, in a manner peculiar to itself, and under circumstances in which the ordinary alteratives are forbidden by reason of their excitive, or otherwise irrelevant properties. 9. It is also sudorific or diaphoretic; and 10. When taken at bed-time, often proves itself soporific: apparently stilling that indescribable, but too well understood inquietude, which so frequently and unhappily interrupts or prevents the repose of the invalid, and especially of the dyspeptic."

Numerous letters are introduced in the pamphlet, from invalids who had visited the Springs, to show their decidedly beneficial effects in various diseases. We the more cheerfully give this brief notice of the Grey Sulphur Springs, as at the time when Dr. Bell wrote his work on Baths and Mineral Waters, they were either unknown or had not attracted any attention.

\* It cannot be determined whether free carbonic acid exists in these waters without going into a quantitative analysis.—C. U. S.

# THE ECLECTIC JOURNAL OF MEDICINE.

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**EDITED BY JOHN BELL, M.D.**

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## **OBSERVATIONS AND EXPERIMENTS ON SOFTENING, EROSION, AND PERFORATION OF THE STOMACH.**

**BY HENRY IMLACH, M. D.,** Extraordinary Member of the Royal Medical Society.

IN 1772, Mr. John Hunter read a paper to the Royal Society of London, entitled "On the digestion of the stomach after death," which was afterwards published in his "Observations on certain parts of the Animal Economy." The account he has given of it is in the following words. "The appearance we allude to is a dissolution of the stomach at its great extremity; in consequence of which there is frequently a considerable aperture made in that viscus. The edges of this opening appear to be half dissolved, very much like that kind of solution which fleshy parts undergo when half-digested in a living stomach, viz. pulpy, tender, and ragged."

It appeared to Mr. Hunter that this must be the process of digestion going on after death; and that the stomach, being dead, was no longer capable of resisting the powers of that menstruum, which it had itself formed for the digestion of food. This theory he supported, and endeavoured to prove from considerations drawn, first, from observations on the human subject, and second, from his experiments on the lower animals.\*

Subsequent authors have canvassed this doctrine with considerable ingenuity, many supporting it warmly, while others, of equal authority as pathological observers, have denied entirely the justness of Mr. Hunter's inferences with regard to the nature of this lesion of the stomach. It will be my endeavour to state, as shortly and clearly as I can, the opinions of some of the various au-

\* These might perhaps have been enumerated in this place with advantage, but as Dr. Carswell has already detailed the observations of Mr. Hunter, as well as much of the earlier history of the investigation of this lesion, I shall content myself with referring to his paper in the 34th, and to the very admirable review of the works of Leuret and Lassaigne and of Tiedemann and Gmelin, contained in the 28th volume of this Journal, as the best and almost necessary introduction to the following remarks.

thors who have treated at length of this curious affection, and to form a candid estimate of their respective claims to accuracy in proclaiming their ideas of the proximate cause of softening, erosion, and perforation of the stomach.

It is of course to be understood that there are not here to be included any observations on perforation of the stomach resulting from ulceration, gangrene, or putrefaction.

Before proceeding, however, with this part of our subject, it may be well to mention shortly the circumstances or conditions under which this softening of the stomach has been found to have taken place. These have been,

*First*, In the dissecting-room, where no accounts had been received of the state of the patient during life. The phenomena in these cases have frequently been well marked, and have been amply illustrated by observations and experiments on the lower animals from the time of Mr. Hunter down to the present day.

*Secondly*, They are said to have been found after death in patients who had previously exhibited a certain train of morbid symptoms indicative of affection of the stomach; and,

*Thirdly*, They have frequently been observed in individuals who had been affected with diseases of other organs, but in whom, though the progress of their cases had been accurately watched, no symptom manifested itself that could excite in the mind of the most attentive physician a suspicion of the slightest gastric affection.

It will soon be evident that different authors have been led to adopt one or other of the hypotheses which we are now to review, respecting the nature of softening of the stomach, according as this affection has presented itself to their observation, under one or other of these conditions.

I have already hinted that there are two opposite opinions with regard to the proximate cause of softening of the stomach. The first is, that it is merely the result of the chemical action of the gastric juice upon the stomach after death, this viscus being supposed to be then no longer capable of resisting, or at least of obviating ordinary chemical affinities, and to allow the production of the appearances in question, which seem to be precisely those that would result as a consequence of digestion, were we to introduce the stomach of a dead animal into that of a living one. This was the opinion of Mr. Hunter, and we shall immediately trace it more fully in the experiments and inferences of Mr. Allan Burns, and Drs. Carswell and Hope.

The second theory that has been brought forward to explain the nature of the lesion under consideration ascribes the phenomena in question to a peculiar morbid process going on in the living substance of the organ. Here, however, there are various opinions about the essential nature of this morbid action; some regarding its proximate cause as being paralysis, others again as a special irritation, or a peculiar kind of inflammation, or some unknown alteration in the nutrition, of the tissue of the stomach. These shall afterwards be mentioned in their order.

Mr. Allan Burns, writing on this subject in 1810, informs us that he had seen nine cases of complete perforation of the stomach of the kind under consideration, and likewise many others, in which the mucous membrane had been dissolved in various degrees. He found that where the coats of the stomach are softened by the gastric juice, the vessels of that organ are unable to resist the force of the syringe in injecting the body. In such subjects, therefore, he found the cavity of the stomach filled with wax, and likewise masses of it collected between the coats of the viscus. This corroborates an observation of Mr. Hunter in the paper already quoted, that "in the affected parts, upon squeezing the blood from the larger into the smaller branches, it was found to pass out at the digested ends and appear like drops on its inner surface." Such an occurrence as that which Mr. Hunter has mentioned of course cannot take place in emaciated and anasarctous individuals, in consequence of their exsanguine state.

Mr. Burns has related a very remarkable example of this erosion of the viscera. "Some time ago," says he, "I had occasion two days after death, to

open the body of a very emaciated and anasarcaous young girl, who had died from scrofulous enlargement of the mesenteric glands. On raising the coverings of the abdomen, the stomach, which was empty, presented itself to view with its front dissolved. The aperture was of an oblong shape, about two inches in its long diameter, and an inch in its short, with tender, flocculent, and pulpy edges. This I demonstrated to the pupils attending my class; and I especially called their attention to the fact, that the liver, which was in contact with the hole, had no impression made on it. Having proceeded thus far, I placed all the parts as they had been, and laid the body aside in a cold situation for two days. Then I opened it again, in the presence of the same gentlemen, and we found that now the liver, where it lay over the dissolved part of the stomach, was pulpy; its peritoneal coat was completely dissolved, and its substance was tender to a considerable depth. At this time the other parts of the liver were equally solid as before, and as yet every part of the subject was free from putrefaction. The posterior face of the stomach, opposite to the hole, was dissolved, all except the peritoneal coat; at least the internal coats were rendered pulpy and glutinous. The peritoneal covering had become spongy, and more transparent than it ought to have been. There was no blood contained in either the vessels of the stomach, or other abdominal viscera. The appearance of the dissolved part of the stomach, and the digestion of that part of the liver which was over the hole, will be sufficient to prove that the solution, in this case, was really produced by the gastric juice."

Dr. Sharpey, now of University College, London, has informed me, that, some years ago, the same appearances presented themselves to his notice in a body he was preparing for dissection; and that he had performed on it an experiment quite similar to that we have just now detailed, with precisely the same results.

The observations of Mr. Burns led him to conclude, that digestion of the stomach after death is neither so rare in its occurrence, as some have imagined, nor confined to such subjects as had been, previously to death, in a healthy condition; and they have also demonstrated, that other parts of the stomach besides the large end may be acted on by the gastric juice. There are very few dead bodies in which the stomach is not in some degree affected; and one who is acquainted with dissections can easily trace these gradations. To be sensible of this effect, nothing more is necessary than to compare the inner surface of the great end of the stomach with any other part of its inner surface; the sound portions will appear soft, spongy, granulated, opaque, and thick; while the others will appear smooth, thin, and more transparent.

Dr. Carswell of London, who has paid considerable attention to this subject, has illustrated the investigation by a variety of experiments upon rabbits, some of which he has delineated, along with other drawings of this lesion as occurring in man, in his "*Illustrations of Morbid Anatomy*." His original paper, which was read before the Royal Academy of Medicine of Paris in 1830, will be found in the *Medical and Surgical Journal of Edinburgh*, Vol. xxxiv. p. 282. In the article, "*Softening of Organs*," in the *Cyclopædia of Practical Medicine*, Dr. Carswell has given an account of the true inflammatory softening of mucous membranes, and has pointed out, in a very clear manner, the anatomical characters which distinguish this inflammatory softening from the one which forms the subject of this paper.

From a consideration of the matters and experiments detailed in the works referred to, Dr. Carswell has deduced the following conclusions. 1. Softening, erosion, and perforation of the stomach may and do take place in healthy animals killed during the act of digestion. 2. These appearances are owing to the gastric juice, the natural secretion of the stomach. 3. The properties of this fluid in a stomach which has undergone one or other or all of these changes, do not differ from the properties it possesses in a healthy living stomach during the act of digestion. 4. Acidity in these two circumstances an invariable and essential property of that fluid, and solution of the coats of the stomach, like that of the food, is a necessary consequence,—a chemical effect of its acidity. 5. Softening, erosion, and perforation are produced equally in other organs, such as

the liver, spleen, intestines, diaphragm, peritoneum, and pleura. 6. In all these cases, the gastric juice is the chemical agent which produces the particular state or states, the place and extent of its action being regulated by position, gravitation, and imbibition. 7. The effects resulting from the action of the gastric juice show themselves not only in a dead animal body, but likewise as quickly out of the body, in dead organs into which it is introduced. 8. All the changes observed in rabbits, whether softening, or erosion, or perforation, are produced after death. 9. The solvent power of the gastric juice cannot be exerted on the living tissues.

To the correctness of the more essential of these conclusions I fully subscribe, from having witnessed the successful repetition by my friend Dr. J. Y. Simpson, of some of these experiments upon carnivorous animals. He found, it is true, a longer lapse of time requisite for the production of these lesions than what is mentioned in Dr. Carswell's statement. This may perhaps be accounted for by the difference in the kind of animal on which they respectively operated, or by some other fortuitous circumstance; but the results were the same in the one class of animals as in the other,—and whether the contents of the stomach were allowed to remain in that viscus itself, or were transferred to other parts of the body, as for example, to the trachea, to the urinary bladder, or to the cavities of the heart. An account of some additional experiments on this subject, made by Dr. Simpson and myself conjointly, will be given in a subsequent part of this communication.

\* The observations that have been made on man seem sufficient to justify us in holding the opinion, that the mode of solution in the human stomach after death is the same as that in animals.\*

I might here have introduced the opinions of M. Andral, Dr. Hope, and others, on this side of the question, but this appears unnecessary, as they seem to me not to present anything newer or more forcible than what has been already given. I shall, therefore, now state somewhat briefly the arguments upon which other authors have founded for themselves the second theory I formerly mentioned, viz: that this softening, erosion, and perforation of the stomach is the result of a peculiar morbid process, or diseased action going on in the living texture of the organ, and manifesting itself during life by a train of well-marked symptoms.

It will save much repetition of description if I be allowed at this place to detail the morbid appearances as they have been observed by most writers, and to sum up the chief symptoms that have been recorded of this so called disease.† We shall then have much facility in comparing together the different authors who have argued for the existence of this disease. This we have the less hesitation in doing, for, though some of them have certainly started original ideas, the majority have as certainly helped themselves liberally to the opinions and even expressions of preceding writers.

But to proceed with our subject. In the first stage of softening, the villous coat is found thinner and paler than in the healthy state. Neither around the softening, nor underneath it, nor in the affected part itself, nor even in the portion of the mesentery corresponding to it, are there found any injected vessels, to indicate pre-existing inflammation. When viewed through a magnifying

\* It is stated in the *Journal Complimentaire des Sciences Medicales*, Vol. xxxviii. p. 98, &c., that the experiments of Dr. Carswell have been repeated by M. Sandras, not only on six rabbits, but also on three guinea pigs, two cats, and three dogs. This experimenter has never seen the stomach perforated, and only on two occasions has he found it softened to any extent. Hence he argues that no inferences with regard to man can be drawn from Dr. Carswell's experiments. Nothing, however, is more easy than the explanation of these contradictory statements. M. Sandras, from being in too great a hurry to prove Dr. Carswell to be in the wrong, did not allow the period of time to elapse which is found necessary for the success of these experiments.

† In the execution of this I have been much assisted by the perusal of a thesis published at Bonn, 1832, by Josephus Steeg, de *Mollitie Membrane intestinalis Mucosae et de ejus sequelis apud infantes*.

glass, the villous membrane appears flaccid, its villous prominences are collapsed, pale, whitish, and yet seem to retain their proper texture, but on being rubbed in the slightest manner, even by the point of the finger, it is converted into a thick mucous-like pap. If in the softened part we follow out the branches of the blood-vessels situated under the villous coat, in many individuals we see them diminished where they run under the softened part, and less patent and less filled with blood than in the healthy state. No thick mucous fluid is to be observed adhering to the softened parts. When the softening is perfect the colour of the villous membrane is pale, or white, frequently approaching to a bluish, appearing either continuous, or in long and narrow vibices, or rather in spots irregularly rounded, and lying more or less close to each other. These bluish portions appear prominent both to the sight and to the touch, and at their termination the healthy parts are seen well marked. The affected places of the mucous membrane are pale, very thin and soft, and converted into a kind of clear mucus, pale and semitransparent. This mucous substance forms a thinner stratum than the proper membrane in a state of health; so that one examining it carelessly would suppose that the mucous coat had been destroyed and the cellular tunic left bare. If the product of the softening process has disappeared, the continuity of the villous membrane is found dissolved, with smooth margins, as if cut, and in its base the subjacent cellular tissue is perceived pale, and without injected blood-vessels. In some cases a large portion of the villous membrane has disappeared; then indeed the solution of continuity is not accurately circumscribed; for the membrane is more and more thinned at the edges, which seem irregular, and as if cut obliquely. The substance being lost in many places at the same time, what remains of the villous coat appears so softened, as not to have more consistence than the mucus commonly found in the intestinal canal. But when the softening is of less extent, no trace of it usually remains in the circumference of the dissolved part, the margins of which are smooth, and as if were accurately cut. The muscular coat, and the peritoneum covering it are often more or less softened and pale; and the process of softening continuing, the intestinal tube is at length perforated.

My friend Dr. Allen Thomson has beautifully delineated, in a coloured drawing made by him from the body of a child that died without having exhibited any symptoms of gastric irritation, in the *Hôpital des Enfants Trouvés*, a stomach which presented the lesion just described. In some portions of it where the destruction is not so complete as it is in the great sac, there is a very striking appearance, as if the fibres of the viscus were separated from each other by a gelatinous mucus. This seems to me to be the result of imbibition of the fluids from the cavity of the stomach, and was probably neither more nor less than the first inroad of the gastric juice upon the dead textures. This appearance has been much insisted on by Cruveilhier, as indicative of morbid action; but the farther consideration of this must be deferred to a subsequent part of this paper.

It would be improper to omit mentioning, that in several instances, as delineated by Dr. Hope, and in most of the experiments of Dr. Carswell, there was a marked alteration in the colour of the blood. "The blood-vessels," says Dr. Carswell, "distributed on the softened parts, and also on every part where imbibition had occurred, no longer presented the red and blue ramifications, which are remarked in the healthy state, when they contain venous and arterial blood. They formed brownish, brownish-black, or almost pure black arborescences. In the great sac of the stomach, the brownish colour was most common, while elsewhere, in proportion as an approach was made to the origin of these vessels, the colour became deeper and deeper,—a circumstance evidently depending on the greater quantity of blood contained in the latter situations. In those parts, on the contrary, where the liquids could not come in contact with the vessels, or be conveyed to them by imbibition, the vessels preserved their natural colour, and formed a very striking contrast by their redness with the deep tint of the others. The intercostal and diaphragmatic vessels where the great sac of the stomach rested on them, even though still covered by the peritoneum, presented the same colouration, which was confined exactly to the space covered by this

portion of the stomach. The same state of the vessels was observed in the chest, in those places traversed by the liquids which had passed through the diaphragm. The form of the vessels was unaltered, and their parietes were even entire, where the colouration of the blood was complete. In this state, the blood seemed less fluid than natural, but it had not separated into clots, or little striated stains, as is observed so frequently and so remarkably in man." In these facts every one must recognize the chemical action which it has been ascertained that all acids produce on the blood when mixed with that fluid.

It has generally been asserted that this lesion occurs most frequently in infants about the period of weaning, but the same appearances may be seen, with but trifling if with any variation, in adults of either sex. There are some slight differences in the accounts given by different authors of the symptoms of this so called disease, and, as nearly as I can understand them, the chief indicative signs, as they present themselves to view in children, may be enumerated as follows.

This disease is frequently preceded by premonitory symptoms, such as loss of appetite, peevishness, restlessness and want of sleep; the tongue is covered with a whitish or yellow fur, and a sour smell is perceived from the mouth, in the cavity of which aphthæ also frequently occur; constant diarrhœa comes on, in the progress of which the little patients become emaciated to a wonderful degree; the neck becomes wrinkled, and a dry and pituitous cough either has existed from the beginning or comes on at a later period. For the most part there is great thirst. The infants cry, or, their strength being much exhausted, lie on the back with the eyes fixed and half closed, their countenance being much disfigured, very pale and bloodless. The diarrhœa after a short time is often diminished, but soon returns with more violence; the skin of the hands and face becomes cold; the pulse irregular, small, scarcely to be counted; and the respiration quickened and short. The infants show no sign of pain upon gentle pressure of the abdomen, but at length die wasted away, their powers being exhausted, quietly and without any convulsion.

In other cases the disease begins with fever; the thirst is insatiable, the pulse much accelerated, with frequent diarrhœa; there is restlessness and frequent screaming, which in a short time passes into continued crying. The legs are drawn up upon the abdomen, which is hard and tumid, and on the application of external pressure, screams and distortions of the face sufficiently indicate pains in the abdomen; the emaciation increases; the countenance becomes pale, frequently also flushed, and wears an expression quite peculiar to suffering. The sleep, which at best is but light, is much broken by continual moaning and screams. The diarrhœa at last remits, convulsions and distortion of the eyes come on; the extremities, though sometimes hot, become at length cold; the pulse is frequent, irregular, small, and scarcely perceptible; occasionally somewhat hard. Cough and mucous rhœnus come on, the breathing becomes difficult, short and stertorous, and at length stupor and death conclude the scene. Other symptoms are frequently present, which indicate in many cases an inflammatory affection of the chest, and in others hydrocephalus.

In Hufeland's Journal for 1811, Jæger, to whom I have already alluded as the author of this theory, first promulgated his ideas of the proximate cause of this affection. This he imagines to be a kind of paralysis of the nerves which supply the stomach, viz. the *nervi vagi* and the great sympathetic. As a consequence of this there is both a change in the gastric juice itself, and a reaction of the intestinal canal upon its contents. Thence arises an immoderate generation of acetic acid; and thus the degeneration is the result of a kind of chemic-animal process, the phenomena of which, having arisen from a morbid change, appear during the life of the patient. He mentions that he himself had attended, and had dissected six cases of this disease, all of which occurred in infants, and exhibited the symptoms and organic lesions we have just mentioned. In some of them he noticed what he conceived to be inflammatory appearances, and says very distinctly, that, for the most part, none of the usual traces of a more violent inflammation appeared either at the affected place, or in other parts of the stomach; but, in one case, the whole circumference of the opening thus made

was of a pretty dark-red colour; in another case he only found the cellular coat, under the soft and swollen mucous membrane, a little reddish; and in a third the peritoneum, the only remaining coat, was rather of a rose colour. He also found that in all these cases the stomach contained chyme, and in one instance firm lumps of coagulated milk. In this last case turnsol paper, on being introduced into the stomach, which gave an acid smell, was immediately turned of a strong red colour.

From the details of the appearances found in the other organs of these individuals I confess there seems to me strong reason to suspect that many of them died actually from hydrocephalus, and others from inflammation of the lungs, any affection of the stomach being merely an accidental coincidence.

Zeller is the next author I have met with who has bestowed some attention upon this subject. He published his Inaugural Dissertation "*De Natura Morbi Ventriculorum Infantum perforantis*" at Tübingen in 1818. The conclusion he has attempted to draw is the result of the observation of a few cases in which acute hydrocephalus and this change of texture in the stomach followed the recession of a miliary exanthema. Following out this observation, he supposes that the spontaneous perforation of the stomach of children may arise from whatever produces irritation of that viscus, as sympathy with the external surface of the body when this is exposed to the effects of cold, or of some peculiar states of the atmosphere, improper nourishment, &c.; and that its proximate cause is primarily an inflammatory state of this portion of the intestinal tube, passing afterwards into the state of paralysis. When the organ is thus paralyzed he supposes it is no longer able to resist the solvent action of the gastric juice, especially at the splenic end, where the blood-vessels are most numerous, and where, he alleges, though without stating any proof, the nerves are fewest.

He has mentioned the disease as endemic at Stuttgart, but without giving any proof of its being so; and this assertion of Dr. Zeller's may be easily explained upon the circumstance that Jäger, the only person who had written on this affection at this time, was himself an inhabitant of Stuttgart, and consequently the only published account of the disease had been taken from it as it occurred in that city.

M. Laisné, in his "*Considérations Médico-Légales sur les Érosions et Perforations spontanées de l'Estomac*," published at Paris in 1819, points out the dangerous errors which might arise in legal medicine from mistaking this affection of the stomach for the effects of some acrid poison, which he says it resembles very much both in the suddenness and severity of its symptoms, and in the morbid lesions to which it gives rise.

M. Laisné has thought fit to deny at once Mr. Hunter's hypothesis, which he asserts to have been founded upon a case Mr. Hunter states himself to have seen, in which the stomach was found perforated by the gastric juice at its splenic extremity, in a man who died of starvation. This case I have been unable to find; at any rate it is not mentioned by Mr. Hunter in his paper on Digestion of the Stomach after Death; and I rather think M. Laisné must have misunderstood the cases which have actually been detailed, or not have read the memoir for himself. The opinion he entertained of the essential nature of this lesion will be best understood from his own words. After refuting the old hypothesis of acidity of the humours producing degeneration of the solids, he says, "it is the universally received opinion, that the first cause of the erosion is not in the fluids; it consists in reality in a special irritation of the solids; only it is possible, and in fact it frequently happens, that, by and by, the juices of the part acquire consecutively a solvent property. Thus we often see the lint and the charpie employed as dressings, to be altered or dissolved by the purulent or ichorous matter of the sores or ulcers. Need we then suppose the presence of a matter, alkaline or acid, to explain the fusion of a solid or its erosion? Was it not life which concreted the fluid from which results the formation of the solid? and will it not suffice, that life may so modify itself, that this solid in its turn may become fluidified?" In this manner, he thinks he has explained the phenomenon, and considers it to be as molecular, and consequently as little apparent as nutrition itself, but to be the inverse of the latter process. He sup-



poses likewise, along with Professor Chausser, but without any foundation in fact, that it commences with an extraordinary development of the capillary vessels, which no one has ever seen, and thence passes gradually into the state of perfect disorganisation.

By far the fullest statement on this side of the question which has hitherto been published in the English language is certainly the paper of Dr. John Gairdner, contained in the first volume of the Transactions of the Medico-Chirurgical Society of Edinburgh for 1835. This essay contains several new cases and some valuable original matter. The propositions which Dr. Gairdner has endeavoured in this paper to support are the following.

1. That erosions and perforations of the stomach, and of other parts of the alimentary canal, which do not appear to be effected by ulceration, are frequently found in the bodies of infants, and occasionally in adults, whose symptoms during life would not lead any one to suspect disease of that canal; but who appear, both from indications during life, and from the phenomena on dissection, to be the victims of other diseases, more particularly in pneumonic, phthisical, apoplectic, and hydrocephalic cases, and in continued fever, puerperal peritonitis, and puerperal convulsions.

2. That similar erosions and perforations are found in the bodies of infants, whose death is the result of a peculiar disease, distinguishable in the living subject by very marked symptoms, which are such as to suggest to the mind of the practitioner the idea that the alimentary canal is the seat of the affection.

3. That in both these descriptions of cases, the erosions and perforations are produced by the action of the fluids of the alimentary canal after death.

4. That in cases of the first description, it is probable that the erosion often happens without any previous disease of the eroded parts; but that in cases of the second class, there does appear to be sufficient evidence of the existence of certain organic changes in the living subject, by which some portion of the alimentary canal is so altered, as to be rendered more easily soluble after death by the action of its contents.

5. That erosion after death does not always follow this morbid alteration, a circumstance probably to be imputed to a deficiency in the quantity or solvent power of the contained fluid.

The facts upon which he founds his opinions are cases of the affection collated from different authors, as well as four others which occurred in his own practice. In three of these it supervened on weaning, while in the fourth case the infant was only sixteen days old. The first infant in which he found it, died of tubercular phthisis. What is singular enough, two of the other cases occurred in the same family. The symptoms in both were the same; but the second of them only was examined after death, and the existence of this lesion in the first was merely an inference drawn from the similarity in the symptoms, and the supposed identity of hereditary constitution. Professor Hamilton, and Dr. Gairdner himself, at the time regarded this as a very severe case of the disease called weaning brash, the *atrophia ablactatorum* of Dr. Cheyne: yet upon these two cases Dr. Gairdner rests much of his hypothesis. The fourth infant seems to me to have died of inflammation of the left side of the chest.\*

The symptoms which Dr. Gairdner remarked in these cases, the second and third of which only seemed to him to exhibit the genuine character of the primary affection, as indicative of gastric disease, were very similar to those I have already mentioned. In none of them, however, did he observe the violent crying, and sudden movements as if from torments, so frequently mentioned by other writers.

With regard to the theory of this disease, Dr. Gairdner thinks it pretty evi-

\* It cannot but be regarded as unfortunate for the progress of pathological science, that Dr. Gairdner had not an opportunity of inspecting the body of the second child, whose case he has described; as a want of correspondence in the morbid lesions seen in its stomach, and in that of the child which he examined, (a circumstance which would most probably have been observed,) must at once have convinced his acute mind of the falsity of the theory which he was led to adopt.

dent that these erosions and perforations do not arise from ulceration, for they are found either without any indications of vascular action, or with only some slight redness of the villous coat, such as have been proved by Dr. Yelloly to be consistent with the most healthy state of the stomach. Besides, there is no pus formed, nor any adhesion of the perforated viscus to the neighbouring parts; and the edges of the opening, instead of being granular, are ragged and fringed. It is also clear that, had the perforation existed for any length of time before death, there must have been effusion of the contents of the bowel, and extensive peritonitis. He therefore adopts in part the Hunterian theory, and ascribes the perforation to the solvent action of the liquids of the alimentary canal after death.

It is worthy of mention, that all the eroded and perforated stomachs of man and animals which have fallen under Dr. Gairdner's notice contained some portion of alimentary matter. He is, however, convinced, from all that he has seen and read upon the subject, that there is a disease primarily affecting the stomach, and sometimes also other parts of the alimentary canal, extremely dangerous in its nature, distinguishable in the living subject by very marked symptoms, and displaying after death the appearances described above; that similar appearances often occur in combination with, or consecutive upon, other dangerous diseases; and that in the latter case, either there is no disease of the stomach during life, or the character of such disease, if it do exist, is so modified by the other affection with which it is blended, as to render the diagnosis extremely difficult. Dr. Gairdner goes on to state that "the peculiar softening of the coats of the stomach and bowels, which occurs in the infantile disease above described, appears to render them a more easy prey to the digestive power of their own fluids; yet, we have seen, that, even in this gelatinous state, the canal is sometimes found entire, which can only be explained by the supposition of a deficiency, either in the quantity, or in the solvent power of its contents. This softening from infiltration of the fluids between the coats in truth, constitutes the only real disease of the alimentary canal in these cases: since those cannot be called *morbid* appearances, which are not produced during life."

M. Desbarreaux-Bernard, in his "*Essai sur les Perforations spontanées de l'Estomac, observées sur des sujets Morts à la suite de violents Douleurs ou des Grandes Opérations* (Paris, 1825,)" has detailed the particulars of six cases in which erosion and perforation of the stomach was found on the dissection of individuals who had died in consequence of severe injuries, and who had experienced violent pain, either when submitting to the operations of the surgeon, or from extensive burns and comminuted fractures.

In all of these the stomach presented the dark-gray or black colour, and in two of them in which the diaphragm had been perforated, the lungs also were attacked, partly dissolved, and blackened in a similar manner.

His opinion of the proximate cause of the lesion is the same with that of Professor Chaussier, who thinks "that the cause of the spontaneous perforations is owing to a special irritation of the tunics of the stomach, which determines the secretion of an acrid and corrosive liquor that turns its activity against the tissue from which it was secreted, and against that on which it spreads itself." The exciting cause in these cases he imagines to be the nervous affection of the brain arising from violent pain, acting through sympathy upon the stomach and there producing irritation.

M. Louis has devoted a considerable portion of his volume of "*Mémoires ou Recherches Anatomico-Pathologiques*," printed at Paris in 1826, to the consideration of softening with thinning and destruction of the mucous membrane of the stomach. He commences with a relation of the cases of twelve individuals, who died in the Hôpital de la Charité, and in whom he found the appearance of which we now speak. In several of these he found the degeneration had given rise to perforations of the viscus, and to a lesion having precisely the anatomical characters which we stated so fully, when commencing the consideration of this the second theory. To the history of each of these cases he has attached a few reflections that are worthy of perusal, and, at page 48, he gives a general summary, which we may consider with attention.

In this he gives a review of the state of the mucous membrane of the stomach in the cases previously detailed. The dimensions of the stomach were variable, being sometimes larger, and sometimes smaller, rarely of what one would call a medium capacity. Externally the bowel presented nothing remarkable; but the inner surface, in some part or other of its extent, was of a pale blue colour; this was disposed in lines, and the difference between it and the healthy parts was as remarkable to the touch as to the sight. Nor were the margins abrupt, as in ulceration, but there was a gradual transition at the edges from the one state into the other. In the points corresponding to the lesion, the mucous membrane was pale, of great tenuity and softness, transformed into a kind of glairy mucus, semitransparent, of the thickness of the mucous membrane of the colon, sometimes less, so that it seemed in many cases, on close inspection, as if the mucous membrane was entirely destroyed, and the cellular coat almost quite bare. The vessels appeared very large and empty on the exposed surface, and when there existed mucosities in the stomach, there was none found on the abraded parts.

The colour sometimes varied from this bluish colour to a pale white and opaque rose, or even gray; sometimes it was bluish or white, with red or black spots. Hence it would appear that the colour is of little importance as an essential character of this lesion. When the lesion presented itself under the form of large and straight lines, it was almost equally distributed over the whole surface of the stomach; when, on the contrary, it was continuous, it occupied the great extremity of the viscus, was seldom limited to the great *cul de sac*, and existed sometimes at the same time near the pylorus and the cardia.

The observation of this affection is a matter of frequent occurrence in M. Louis's experience, and he himself tells us that it is to be found in about one-twelfth of all the bodies that are opened. In most of these it occurs as a complication of some other disease, more especially of *phthisis pulmonalis* and of *encephalitis*, though often enough, according to him, as a distinct disease, which may be recognized by its train of well marked symptoms, which, as they have already been enumerated, it would be quite needless to restate.

From the remarks on some cases of *gastritis* with thickening and other alterations of the mucous membrane of the stomach, which M. Louis had added in this memoir, his opinion of the proximate cause of this lesion would seem to be, that it consists in an inflammatory state of the bowel: and he has subsequently stated the same idea in some of his other works. To his last opinion, however, we shall advert before concluding this communication.

Dr. Camerer has published a thesis under the sanction of Professor Autenreith of Stuttgart, on this softening of the stomach, and we may consider that in it we have the Professor's own opinion expressed. In addition to the symptoms of this affection already mentioned, Dr. Camerer finds it to be attended with severe tormina and smart fever. The investigation of its causes has led the author, along with Professor Autenreith, to make some interesting experiments on the lower animals, in the course of which they have confirmed the accuracy of the experiments of Hunter, Gairdner and Carswell, in the same line of research, and have found that whenever an animal is killed during the process of digestion, the stomach, under certain circumstances, is liable to be eroded in the manner described. They have also performed several original experiments:—thus they mention, that “a fluid collected in the stomachs of two children who had died of a gelatiniform ramollissement of that viscus, was introduced to the amount of a drachm, into the stomach of a man not long dead, which was then kept for twelve hours, at a temperature of 77° Fahrenheit. At the end of that period, the membranes of the stomach were found dissolved through to the peritoneum, wherever the fluid had been in contact with them. The same fluid was introduced into the stomach of a living rabbit without producing any bad effect, and on the animal being killed, its stomach was found in the most healthy condition. On the contrary, another portion of the same fluid having been deposited in the stomach of a rabbit after death, its parietes after a certain period exhibited a pultaceous softening.” They also found the following experiment to succeed, viz. that on cutting the nerves of the stomach, to wit, the *par vagum*

each side, and the splanchnic branches of the great sympathetic, in a living animal, the lesion was induced in the living but paralyzed organ, by the natural gastric juice, by the fluid extracted from the stomachs of children who had died of gastromalacia, (as some call softening of the stomach), or even by the introduction of diluted acetic acid.

From these observations, then, they conclude, that "the stomach is enfeebled, almost paralyzed, in this malady, and that there is, moreover, an affection of the *par vagum* of an inflammatory nature. They have been led to this latter conclusion, 1st, By frequently observing an unusual hardness in the *Pons Varolii* and *Medulla oblongata*, on dissection of subjects dead of this disease, the other parts of the brain retaining their natural consistence; and 2d, by the almost invariable accompaniment of respiratory disorder in softening of the stomach. This inflammation of the pneumogastric nerves ends in paralysis of the same nerve, as shown by cessation of vomiting and of diarrhoea, a little before death. But as the vascular system is not proportionally impaired, as proved by the continuance of the febrile phenomena, the gastric juice continues to be secreted, and that of extraordinary acidity, so as to be capable of dissolving the coats of the stomach, already in a weakened state."

I should not have introduced the opinion of M. Billard on this subject, had it not been for two very good drawings of the lesion that he has given in his "Atlas d'Anatomie Pathologique," intended to illustrate his "Traite des Maladies des Enfants," (Paris, 1828.) The cases referred to were of *muguet*, and the symptoms preceding death, as might be expected, were those of gastritis: so that I do not conceive our author by any means to have sufficient evidence of the truth of the hypothesis he has expressed in the following words:—"What then are we to conclude from the preceding facts and considerations, but that the gelatiniform ramollissement of the stomach consists in a disorganization of the mucous membrane of this organ caused by an acute or a chronic phlegmasia; that this disorganization has for its characteristic, accumulation of serosity in the parietes of the organs, swelling and gelatinous consistence of the mucous membrane in a point generally sufficiently circumscribed, situated most commonly in the great curvature of the organ, and round which the membrane presents traces more or less evident of an acute or chronic phlegmasia; that the disorganization of the mucous membrane overcoming its cohesion may give rise to spontaneous perforations, which speedily cause the death of the patient; that it may develop itself not merely about the time of the first dentition, but likewise in very young infants."—P. 332.

Dr. G. F. Beck, in his inaugural dissertation, published at Tübingen in 1830, has given an account of what he considered an epidemic of this disease, which occurred in that city during the summer of the same year. He had ascertained the existence of twelve cases only, and this number, I think, can scarcely constitute an epidemic. They, too, were discovered in individuals who had died of acute hydrocephalus, pectoral diseases, or acute exanthemata.

The disease is said to have occurred epidemically also during the same year at Jena, near Weimar, and was described by De Rein in his "Dissertatio Inauguralis Medica de Gastro-enteritide Infantum, anno mcccxxx. Jenae observata." During the course of the summer and autumn there occurred *four cases*.

Fleischmann has attempted to explain the frequent occurrence of this softening at the splenic end of the stomach, from its communication there, both by nerves and by the *vasa brevia*, with the spleen,—an organ which he conceives is very considerably affected in this disease, and which, probably, gives rise to many of the symptoms that have been attributed to the gastric affection.

It is perhaps scarcely necessary here to allude to the opinion of Mr. Charles Winter, of whose paper, entitled "On the real nature of Gelatiniform Ramollissement of the Stomach," an abstract will be found in the first volume of the Dublin Journal of Medical and Chemical Science for 1832. The proximate cause of this lesion he considers to be "a predominant venosity."—"The icterus and erysipelas," says he, "of newly born infants, induration of the cellular tissue, aphthæ, and gelatiniform ramollissement of the stomach, are affections

of the same nature, often arising from the same causes, and existing in the same individual." This cause he supposed to be a pathologic state of the venous and capillary systems; but he thinks that the veins alone are primarily engaged, and that the affection is but secondarily transmitted to the capillaries. It does not seem easy to understand in what a predominant venosity consists, or how any such pathologic state should operate in producing the lesion in question.

Reference to more works on this subject may be found in the very learned thesis of Baumgarten-Crusius "de Gastro et Entero-Malacia Infantum," published at Berlin in 1831, wherein is contained a most ample catalogue of all the authors who have written papers on softening of the stomach.

Before drawing this paper to a close, it only remains for me to speak of M. Cruveilhier, who in 1821 published his "Médicine Pratique éclairée par l'Anatomie et la Physiologie Pathologiques;" and in 1834, (I think,) the tenth fasciculus of his "Anatomie Pathologique du Corps Humain," containing his opinion with regard to the proximate cause of this lesion. M. Cruveilhier entertains not a doubt of the existence of this as a disease *sui generis*, and thinks he saw it occur epidemically among infants in the months of August, September, and October 1819, at a time when intestinal affections and intermittent fevers prevailed to a great extent. The idea he entertained of its proximate cause at the time of his first publication he has expressed thus:—"The acute spontaneous perforations are always preceded by a gelatiniform ramollissement, with thickening of the parietes of the organ. These may have their seat in the small or in the great intestines, as well as in the stomach; they have been observed even in the œsophagus. The gelatiniform ramollissement proceeds always from the interior to the exterior. There exists at first a mere separation of the fibres by a gelatinous mucus; by and by the fibres themselves are attacked, become semitransparent, and at last disappear; so that the softened stomach resembles a transparent jelly rolled round like a tube or portion of a tube. If the gelatiniform disorganization be complete, the disorganized parts are by degrees removed, and the parts that remain seem thinned. In all the cases of perforation of the stomach or of the intestines in consequence of this alteration which I have seen, the part so altered, and the textures in its vicinity, present neither change of colour, vascular injection, nor gangrenous odour. The conversion of the stomach or the intestines into a jelly by boiling gives a perfect idea of this kind of alteration. Can one mistake in the cause of this disease, the kind of lesion which constitutes it, and in the appropriate treatment, an acute irritation, whence results a repeated afflux of white fluids destined without doubt for exhalation, but which finding a texture too delicate, distend, disorganize these tissues, and penetrate them like an inert body. But what is the mechanism of this transformation? Does it belong to a special mode of irritation? This is probable; but its mechanism is as unknown to us as that of the organic phenomena which take place in the capillaries."

Since the publication of Dr. Carswell's experiments in 1830, M. Cruveilhier has modified his opinion in so far that he has endeavoured in his last great work to reconcile if possible the two hypotheses. He allows that a certain *pulpy ramollissement* takes place in the stomach of some individuals from the action of the natural gastric juice after death, but adds that this *cadaveric pulpy ramollissement* has been confounded with the true *gelatiniform ramollissement* by all the authors who have occupied themselves with this subject. "It was so," says he, "with Dr. Carswell, and equally so with all the distinguished critics who have given an account of the work I published in 1821. I am inclined to believe that few of them have ever observed at all the *gelatiniform ramollissement*." He has attempted in the 15th, 16th, and subsequent paragraphs, to make out the diagnosis between these two kinds of ramollissement, but with very little success. The only difference he has pointed out is, that the one is generally found in the splenic end of the stomach, and the other occasionally in its anterior wall. Dr. Carswell has already shown that the position of the lesion is a matter of no consequence. Any degree of difference in their transparency, as indicated by their respective names, must also be of but little use to us in distinguishing between pultaceous and gelatiniform ramollissement.

Besides the experiments on carnivorous animals, and on the transference of the gastric juice to various organs formerly alluded to, the principal other experiments which I have seen Dr. Simpson perform, and in most of which I co-operated with him, are the following:—He procured the stomach of a pig, as being that of an omnivorous animal, and therefore most similar to that of man. The animal had been fed about an hour and a half previous to death, and the stomach was found to contain a considerable quantity of chyme. Portions of this matter, the acid character of which was indicated both by the change of colour it effected on vegetable infusions, and by its smell, were introduced into different parts of the alimentary canal, such as the small intestine, cœcum, and colon, and these, along with the stomach itself, were kept in water about the temperature of 70° Fahr. for between sixty and seventy hours. Upon examination after this lapse of time, there were no signs of putrefaction. It would indeed have been very singular had there been any, when we remember that the gastric juice is one of the most antiseptic fluids known, and the period of time since the death of the animal was not great. But although no putrefaction had occurred, we generally found the substance of the portions of great and small intestine much softened, somewhat darkened in colour, and at particular places quite eroded, with numerous large perforations. The stomach itself was never found perforated, till it had been 90 or 100 hours under the action of the fluids contained in it,—a circumstance which may justly be attributed to the great thickness of the coats of this viscus in the sow. It was, however, generally observed to be much softened and discoloured in its mucous coat some time before this period. This alteration of texture was sometimes limited by a distinct abrupt line which separated the natural from the dissolved parts. This seemed to occur in cases in which there was a considerable portion of air within the stomach, distending its cavity, and thus removing the superior parts of it from contact with the contained matters. In other instances where the gaseous fluids were allowed to escape, or were not generated in any quantity, the solution of the stomach was more extended, and at its edges presented the fringed and torn appearance so generally described. The stomachs of three dogs, which had been killed with large doses of hydrocyanic acid, about an hour or a little more after having been well fed, were subjected to a similar degree of warmth and moisture, and in the course of fifty hours were found to have undergone solution and perforation in many places.

Dr. Simpson also ascertained that this same phenomenon of softening and perforation frequently takes place in the rennet, that is to say, in the stomach of the calf (which contains portions of curdled milk and gastric juice,) that has been well salted and dried in order to preserve it for coagulating milk. It is a matter of very frequent occurrence to find numerous large perforations in this substance, if it has not been kept in a perfectly dry condition.

Dr. Carswell having stated (*Cyclopædia of Practical Medicine*) that the introduction of an alkali into the stomach under experiment, and the consequent neutralization of the gastric acid prevents the erosion that would otherwise take place, we introduced into several portions of intestine the gastric liquor, mixed with a large quantity of magnesia, and found, contrary to what the statement of Dr. Carswell led us to anticipate, that as numerous and as large perforations occurred in these as in the other and adjoining portions of the same intestine submitted to a comparative trial, and containing gastric matter without the admixture of any alkali. In these cases there was also a very remarkable blackening of the intestinal texture, so as to give it the appearance of having been stained with China ink, the cause of which I am unable to conjecture, not having been able to learn what communicates a black colour to magnesia. It is consonant, however, with the experience of nurses, that, on mixing magnesia with warm water, a yellow or grayish colour is produced. Gruel is also found to become blackened on the addition of magnesia. It is right to mention, that in all our experiments, the portions of intestine were inverted and washed to clear them from any foreign substance they might contain, before the chymous matter from the stomach was introduced into them.

From these experiments, which were repeated by us on various occasions, I,

for my own part, am fully convinced of the truth of an opinion I have for some time entertained, viz. that though we never find healthy gastric juice *not* containing acids, yet we must not thence infer that these are by any means the sole, or even the principal agents in effecting the solution of alimentary matters, or chymification.

In the few attempts Dr. Simpson and I made upon cats and rabbits to repeat the experiments of Dr. Camerer, by cutting the *par vagum* in the neck, we have as yet been unsuccessful in procuring his results. My own opinion is, that it is impossible ever to succeed in this; but as yet we have not a sufficient number of negative facts to overthrow the assertions of this author.

Having now given an outline of the opinions of authors on the subject of this peculiar lesion, I beg to state the conclusion which I have formed from an attentive consideration of what has been written on it, as well as from the few original experiments I have detailed. I consider that the opinion of Mr. Hunter has been most amply proved to be correct by Dr. Carswell and others, including Dr. Gairdner and M. Cruveilhier themselves,—to wit, that the gastric juice is quite capable of producing, and frequently actually does produce, solution of the coats of the stomach after death, whatever designation we may give to this appearance, as pultaceous or gelatiniform ramollissement, mollescence of the stomach, gastromalacia, &c. This has been firmly established by numerous direct experiments on animals, whether carnivorous or herbivorous, and by the observation of a sufficient number of cases in man in which this state of the stomach has been found after sudden death from external violence while in the enjoyment of perfect health, and during the process of natural digestion. The same cause I think, has evidently operated in the other individuals in whom it occurred, who died from well-marked diseases of other organs; and we have the more reason for believing this, inasmuch as it has never been proved to have occurred where the stomach has been found empty at death, or where the examination of the body has been made a few hours merely after the termination of life; and all the authors who have taken notice of this circumstance, have particularly mentioned that the stomach contained some portion of alimentary matter or chyme. But we know that, independently of the presence of food, many irritating medicines will cause the secretion of the gastric juice; and every one knows that the readiest mode of procuring this fluid is by feeding an animal with pepper, or even with fragments of pebbles.

On the other hand, authors have failed entirely in establishing the existence of a peculiar morbid process causing perforation of the intestinal tube without ulceration; while yet no one would absolutely deny that there may exist some state of the viscus, rendering it a more easy prey to the action of the fluid it had itself formed. Again, we must remember that a more active condition of the gastric juice is by no means a proof of morbid action, for increase of power in a natural function in general only shows the higher perfection of the healthy state. Nor must we lose sight of the fact, that the peculiar train of symptoms, which we formerly enumerated, has been present in many individuals, in whom, after death, no such lesion of the stomach has been detected in any very appreciable degree.

Such, then, is the opinion I have endeavoured to support,—one which is beginning to be the received opinion in Paris, and the same I have no doubt will soon be established as true. Thus M. Louis, in 1834, says in his "Examen de l'Examen de M. Broussais relativement à la Phthisie et l'Affectio Typhoïde" (p. 15,) "I will not accept the congratulations which M. Broussais has addressed to me on the subject of ramollissement with thinning of the mucous membrane of the stomach, which I do not hesitate, says he, to explain by inflammation; for I have only said that this explanation seemed to me very admissible, without having considered it as being rigorously demonstrated. More lately, I have thought I could entertain new doubts relative to the justness of this interpretation. I have said, in fact, in my *Recherches sur l'Affectio Typhoïde* (i. 183,) that it seemed to me extremely probable, that, in a certain number of subjects, the lesion in question was not inflammatory, both because we do not find any evident traces of inflammation round the part which is softened, thin-

med, and pale; and because in these cases, the submucous cellular tissue participates in the alteration of the mucous membrane, and, though softened and thinned like it, is not inflamed in any part,—a circumstance which is quite contrary to what happens in the violent inflammation of the mucous membrane of the colon, for example, and that it is impossible to conceive according to the hypothesis that would make this lesion to be inflammatory. I shall add, that the memoir of Dr. Carswell is far from having strengthened me in the belief that the ramollissement which now occupies our consideration is the product of inflammation; that I ask for myself on the contrary, without being yet able to solve the problem rigorously, if the ramollissement of the stomach, and the perforation which is sometimes the consequence of it may not be in fact, as this honourable and talented physician has said, the product of a chemical action in the great majority of cases.” —*Edin. Med. and Surg. Journal.*

## PHYSIOLOGY.

### ON THE CILIARY MOTIONS IN MAN.

BY C. T. VON SIEBOLD.

WE derive this and the following articles from the British and Foreign Medical Review.

The author of this paper has continued the experiments of Purkinje and Valentin, and he has added some facts which he has himself noticed, respecting the existence of the vibrating cilia upon the mucous membranes in man. He found these cilia upon the whole surface of a nasal polypus, one hour after its removal from an adult. The length of these cilia was 0.0028 and 0.0022 of an English line. The motions of the cilia upon one polypus which was examined, were found to be quite regular in their rhythm: in some parts they moved backwards and forwards 300 times, in others 320 times, in others 190 times, in a minute. The movements were always in the same direction; and, when once they ceased, were never resumed. By a very accurate examination, M. Siebold says that he has ascertained that each cilium curves its free extremity towards the part to which it moves, and that small globules of mucus, when in the vicinity of this oscillating body, are thus propelled in the same direction as the curve of the cilia. On condylomata at the entrance of the vagina no cilia could be discovered. They were also not found on the bronchial mucous membranes of those who had died of pneumonia, or of those who had suffered before death from a copious bronchial mucous secretion. In warm weather, also, it is useless to look in the human corpse for the cilia upon mucous membranes. M. Siebold has examined other membranes without finding any cilia; e.g. synovial membranes, sheaths of tendons, the internal surface of arteries and veins, that also of the vessels of the placenta, as well as serous membranes in animals the mucous membrane of whose bronchial apparatus presented an abundance of cilia. M. Siebold recommends all those who are anxious to examine this phenomenon to first experiment upon bivalves, (*Unio pictorum*, *Anodonta anatina*, *Cyclas cornea*;) for in them the cilia are most evident and their motions most easily recognized, abounding as they do upon their gills, tentacula; intestinal canal, &c. Having once witnessed the structure in these animals, it will be readily ascertained in man and other animals.—*Medicinische Zeitung*, No. 23. 1836.

\* To the kindness of Dr. William Thomson I have been chiefly indebted for the opportunities of consulting the different Theses. I have had occasion to quote in the foregoing communication.



**ON THE CILIARY MOTIONS IN THE BRAIN.** BY M. PURKINJE. — It has at length occurred to me to discover cilia, and their motions, in all the cerebral cavities of mammalia. In the preceding summer, while examining the *chorda Bergmannica*, having observed, on fine slices of epithelium, a structure similar to that of the ciliary membranes, I conjectured that it would be found to possess the same function. Accordingly I made many investigations with the view of discovering this, but in vain, until the 28th of May of the present year (1836,) when I detected the ciliary motions, in the greatest activity, in the brain of the full-grown fœtus of a sheep, about thirty hours after death. The cilia were very distinct on all the walls of the cerebral cavities, and even where they were not in motion. I traced the motions, without difficulty, through the third ventricle into the infundibulum, then through the aqueduct of Silvius into the fourth ventricle. Here there was no motion perceptible, but the cilia themselves were distinctly visible, although somewhat shorter than in the former situations. The cilia are proportionately long pointed, (not ragged as in the bronchi,) and vibrate thong-shaped, (peitschenformig:) we can also distinguish a layer of granules, in which they are fixed, and which can be easily stripped off without destroying the continuity of the epithelium. I recently observed them in the brain of a sheep; and Dr. Valentin saw them in the full-grown fœtus of a sow; but they could not be detected in a much younger fœtus of the same animal, probably because the parts are too fine for our gross instruments. In these observations I could remark that the cilia in the ventricles of the brain were much more sensitive and easily destroyed than in any other structure. I could not detect them in the brain of a sparrow, nor in a carp, nor in a diseased human brain. Probably they are in all parts very transient, yet readily reproducible; at least, this may be considered as made out in regard to the ovaria and mucous membrane of the nose.—*Müller's Archiv.* No. III. and IV. 1836.

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## PATHOLOGY.

Of more value than any selections under this head, will be found the long and instructive essay by Dr. Imlach, on *Softening, Erosion, and Perforation of the Stomach*, with which the present number of our Journal opens.

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## THERAPEUTICS.

### CHRONIC FLUOR ALBUS, CURED BY IODINE.

BY DR. MULLER.

A YOUNG female had long suffered from leucorrhœa, which had diminished her strength, and had yielded to none of the means commonly employed in this disease; when the ointment of the hydriodate of potass was rubbed, morning and evening, into the internal surface of her thighs. After this inunction had been continued for four weeks, the disease had entirely ceased; and a careful and nutritious diet soon restored the strength.—*Wochenschrift für die gesammte Heilkunde*, No. 40. 1836.

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### ON THE USE OF INDIGO,

*As a therapeutic agent against Epilepsy.* By IDELER. (Medical Intelligence published by Medical Union in Prussia, No. vi. 1835.) *Observations on Indigo, as a curative remedy in Epilepsy and other spasmodic diseases.* By Dr. ROTH of Mainz. (From the New Scientific Annals (Neue Wissenschaftliche Annalen,) published by Dr. Hecker, Vol. 1st to 4th. Number I. Berlin 1835.)

Indigo was first employed as a therapeutic agent in the treatment of epilepsy, by

Lenhossek, and afterwards by Grossheim and others. Its efficacy was afterwards tried by Ideler, a Prussian physician; and among 26 patients, in whom indigo was experimentally tried, 6 individuals recovered completely; 3 were dismissed cured, and had first after intervals of from 8 to 12 months a relapse, under the operation of causes, which might have induced epilepsy; of 11 patients, the condition underwent an essential improvement; and in 6 individuals no change took place. At first, the patients were wont frequently, though without effort, to vomit; after some days this ceased, and in its place, there took place diarrhoea, which at first caused from 6 to 8 motions daily, and was occasionally accompanied with moderate colicky pain, but afterwards moved the bowels only two or three times daily, but with fluid motions, and continued so long as the indigo was used, but without impairing the appetite or digestion. The curative reaction of the nervous system upon the agent was principally indicated by this circumstance, that the epileptic symptoms in the first period returned more frequently, and attained a higher degree of intensity, but afterwards became less frequent, milder, and at length entirely disappeared.

Most usually the indigo was exhibited in the form of electuary, with a proportion of the aromatic powder, because, alone, it is very disagreeable to the patient. At first it was administered in the dose of one scruple; this was quickly increased to a drachm and more, so that daily from half an ounce to one ounce might be used for a series of months without difficulty.

In a paper in Graefe and Walther's Journal, entitled Contributions to Casuistics, by D. Moritz Strahl, of Berlin, are some observations on the operation of the same remedy in spasmodic diseases. In the trials made by Dr. Strahl with this agent, in 10 cases of inveterate epilepsy, in which it was given in progressively increasing doses, of from one scruple three times a day, to half an ounce daily for the space of 10 weeks, it produced not the smallest effect. During its employment, the stools became blue, and the urine assumed a dark-green colour. Excepting slight inconvenience of the stomach, no operation of the remedy upon the organism could in general be observed. On the other hand, indigo, in 4 hysterical females, one of whom was already in the age of decrepitude, evinced the presence of very remarkable phenomena. In all, after about two drachms daily had been taken, violent pain in the region of the kidneys like colic, took place, the urine assumed a deeper intensity of colouring than in male patients, and at the bottom of the vessel was observed no trifling quantity of fine indigo powder. The intense renal pain continued for 4 days, and at length subsided under the continued employment of an oily emulsion. In one case only did there ensue a remission of the spasms, and the patient was not entirely well 3 months after the cure was completed. The operation of the indigo, further, on the womb, was very remarkable, since, in two cases, an amenorrhoea was radically cured, while the spasms were throughout undiminished. In two cases of St. Vitus's Dance, in a boy of 12, and a girl of 9 years, the indigo was throughout unavailing.

The different clinical trials made with indigo by Dr. Roth furnished the following results. In epileptic cases, the remedy evinces almost always the same immediate operation; but its subsequent consequences are regulated by the degree of vitality of the nervous system of the patients, and the kind and duration of the epilepsy. These effects are beneficial in all idiopathic epilepsies, curative in those of this class which have not been of long continuance; and in very chronic idiopathic epilepsies, indigo diminishes the violence and the frequency of the paroxysms. Of symptomatic epilepsies, only a few are alleviated by the use of indigo, none are cured.

Physiological operation of indigo. In almost all patients, the use of indigo is succeeded first by squeamishness and vomiting, though the substance itself be tasteless and inodorous. The violence of the emetic efforts appears to be regulated by the individual irritability of the gastric nerves of the patients. Females vomit more readily than males. The vomiting itself is at first continuous, that is during the continued use of the agent, and often so violent that the indigo must be given up; but after several days it ceases. It has otherwise the peculiarity that the contraction of the abdominal muscles, and the diaphragm is much

less violent, and the debility is less considerable than after vomiting induced by other means. The contents of the stomach present nothing unusual, even in respect to taste, only they are of a very dark blue colour, and the fluid is intimately mixed with the indigo, from which it may be inferred that the gastric juice contributes very much to the digestion of the indigo.

Diarrhœa, the second physiological effect of indigo takes place in general first when the vomiting ceases; yet from this many patients remain altogether exempt. In general diarrhœa when once commenced continues so long as the patients take the indigo, and increases in intensity during the continued use of the remedy. The motions are generally soft, semifluid, and of a dark blue-black colour. The vomiting and diarrhœa are frequently accompanied with slight colicky pains in the stomach and bowels, which, however, may be so violent as to require the indigo to be given up. Those patients who are exempt from vomiting appear to be attacked with more violent colicky symptoms. By the continued diarrhœa there is formed a species of gastrosis (irritation of the mucous membrane of the stomach and bowels,) with loss of appetite, headache, and giddiness, and sometimes the sense of dazzling lights in the eyes.

The third physiological operation of indigo is seen in the urinary secretion. The urine assumes a dark-violet colour, deepest in the morning. On the quantity of the urine the agent seems to exercise no influence.

Dr. Roth did not observe coloration of the sweat. But it is remarkable, that one patient, after the use of indigo for several weeks, fell often into slight convulsions, similar to those which ensue on the employment of the nitrate of strychnia.

The dose of indigo is regulated by the irritability of the stomach. It is best to begin with grains, and rise gradually to drachms, or even several ounces daily. Dr. Roth gives the preference to the form of electuary, with proportional additions of the aromatic powder, or Dover's powder, as correctives. In the formula employed in the Hospital of the *Charité* at Berlin, half an ounce of powdered indigo, rubbed up with a few drops of water, is mixed with half a drachm of aromatic powder, and one ounce of simple syrup, and to be taken in divided doses in the course of the day. Many even take from a half to two ounces, twice and four times daily for the space of several months.

In what manner indigo operates, and to what class of medicines it belongs, is very difficult to determine, and certainly cannot be inferred from its constituent parts. Probably its active principle is seated in the peculiar colouring matter. Though in many respects the operation of indigo is similar to that of tartar emetic, yet this attacks more forcibly the energy of the organism. In all the patients after the use of the indigo, the spasms were at first more frequent and more intense, but shorter in duration; but after some weeks their intensity was manifestly abated, and at length they entirely disappeared. All the patients cured by indigo laboured under idiopathic epilepsy, that is, epilepsy without symptoms of organic lesion. Around those who were improved were several idiopathic and symptomatic cases. In one case of epilepsy, which ensued after a remarkable contusion of the head, after the employment of indigo, a moderately long intermission took place. A boy of 16 years of age, who had laboured for eight years under St. Vitus's Dance, and then was attacked with epileptic spasms, was cured of all the symptoms by the use of indigo for six weeks. Of 26 epileptic patients treated by means of indigo there recovered—4 males and 5 females; 3 males and 8 females were improved; and 4 males and 2 females remained uncured. In confirmation of the foregoing inferences, the author communicates the history of two cases in which the treatment by means of indigo operated beneficially, after other means had been found unavailing.—*Edinb. Med. & Surg. Jour.*

#### IODINE IN MERCURIAL SALIVATION.

BY M. KLOSE.

Salivation had been produced in two children, during their convalescence, by mercury which had been administered on account of inflammation of the brain.

To remedy the salivation, iodine was employed; and, after its first two doses, the peculiar smell of the mouth disappeared, the flow of saliva diminished, the pains became alleviated, and the aspect of the ulcers in the mouth was improved. The children were five and seven years of age. The iodine was discontinued before any of its peculiar symptoms were produced. M. Klose thinks iodine of value in such cases; and, as the remedies with which we are at present acquainted appear to possess but little influence over mercurial salivation, when it is once established, a new remedy which promises fairly is worthy of all acceptance.—*Medicinische Zeitung*, No. 34.

#### INTERMITTENT EPISTAXIS, CURED BY QUININE.

A strong man, æt. 27, suffered on alternate days from very violent bleeding at the nose, which continued from four to six hours, and could neither be put a stop to, nor alleviated by the common styptics, nor by any of the other means which are usually employed in similar cases. Regarding the periodicity of the occurrence of the bleeding, the treatment was changed, and a large dose of quinine, with diluted sulphuric acid, was administered. During the twenty-one days following, the bleeding recurred but twice, and was then readily stopped. The patient subsequently continued quite well.—*Med. Zeitung*, No. 33.

### SURGERY.

#### ON THE PERMANENT IMMOVEABLE BANDAGE.

BY DR. SUETIN.

DR. SUETIN has employed for some time, a bandage constructed upon the same principles as those which Larrey and subsequently Deffenbach recommended in certain cases of fracture, deformity, &c.: but he has introduced a modification which, from considerable experience, he is disposed to regard as an improvement; and he conceives that its application will be attended with benefit, in a much greater number of cases, than those in which it has hitherto been employed.

The chief advantages attending the use of the permanent immoveable bandage, and which contrast it with those commonly employed, are, that when applied to a limb, it fits itself to all the inequalities of its surface, constitutes a compact covering, no one part of which can be moved without the simultaneous motion of the whole. Its action is not upon particular parts of the limb, but upon its whole circumference, and it is thus a splint in every direction. When applied it fulfils a threefold indication: it maintains permanent coaptation; opposes constantly the action of forces which tend to disturb the relations of the reduced fracture; and effects all this, by a uniform, regular, and methodic compression. These are advantages rarely to be obtained by the ordinary means, and they are such as render the bandage a valuable acquisition in many other cases, than in those of fractured limbs. And even in cases of compound fracture, where great suppuration is to be anticipated, the application of this bandage has appeared very much to limit the process of suppuration. In this observation Dr. Suetin agrees perfectly with Larrey.

Inflamed articulations, where rest is desired; diseased joints, where the object is to effect ankylosis in a favourable position, club-foot and analogous deformities of the limbs, and other obvious cases, indicate the application of this permanent bandage.

The material employed by Dr. Suetin, recommends itself by its cheapness, and with the facility with which it may at all times be obtained. The essential parts of the apparatus are a roller or many-tailed bandage, pasteboard splints, and a solution of starch in water of a thick mucilaginous consistence.

The general mode of its application, varying in some degree according to the parts to which it is applied, is as follows: Enclose the limb in the roller or bandage, and then smear its whole surface with the solution of starch. Over this again pass another roller and let an assistant spread the starch over each turn as it is made. When this has been done, apply the pasteboard splints, which must be cut and moistened so as accurately to correspond with the limb. Dr. Suetin recommends that the pasteboard should be torn instead of cut, as it has not then a sharp and irritating edge. When the pasteboard is also smeared with starch, pass the last bandage over the whole. Of course, in the application of this treatment to fractures of different kinds, the particular circumstances of such fractures, and the general principles of treatment will require certain modifications, which it is needless to specify.—*Bulletin Médical Belge*, No. 11. Novembre, 1836.

### CHRONIC CATARRH OF THE BLADDER, TREATED BY INJECTIONS.

BY D. M. DEVERGIE, SEN.

Dr. Devergie has recorded eight cases of chronic catarrh, some of long standing, which were cured by injecting balsam of copaiba into the bladder. Some of these cases had succeeded to an acute cystitis: in others the disease had gradually manifested itself and maintained throughout its chronic character. If stricture of the urethra exist, this requires to be remedied before employing injections. A moderate quantity of an emollient fluid must first be injected, to ascertain the capacity of the bladder, but not in sufficient quantity to irritate it. General means must be resorted to, to calm the inflammation and local pain, the general erethism, &c. Narcotics must next be added to the emollient injections; and these may be repeated three or four times daily. When the state of irritation of the bladder and neighbouring parts is allayed, the copaiba should be injected. A dose of uniform strength is not suited to every case. A drachm of balsam of copaiba to an ounce of barley-water is strong enough to commence with; the quantity of balsam may be increased according to its effects. The combination of narcotics with copaiba renders the latter less exciting. The balsamic injections may be allowed to remain in the bladder for a period of from ten to twenty minutes. The quantity of copaiba is to be gradually augmented; and it should not be injected more frequently than once daily, nor intermitted more than two days. The injection is to be continued until the muco-purulent secretion has quite ceased. It is necessary to guard against the occurrence of inflammation of the mucous membrane of the alimentary canal, and under such a circumstance to suspend the use of the balsamic injections.—*Gazette Médicale de Paris*.

### NEW MODE OF OPERATING FOR NÆVUS.

BY MR. LISTON.

A child, aged twenty months, was admitted into the North London Hospital, on the 2d of November, with a nævus, of the size of a pigeon's egg, on the face, near the nose. It had gradually increased to its present size, was compressible, and filled speedily on the removal of pressure. On the 7th, Mr. Liston made a crucial incision through the integuments covering the tumour, and carefully dissected back the four flaps, so as completely to expose the tumour. A needle, armed with a double ligature, was then passed through the base of the tumour, and another, in like manner, at right angles to the former. The needles being withdrawn, four ligatures remained, and were successively tied over the tumour, so as to comprehend the whole. Water dressings, at first cold, and afterwards warm, were applied. The case went on favourably, and the report on the 21st (the fourteenth day after the operation,) is, "The whole tumour is now come away, the swelling is abating, and the edges of the integument coming gradually together."—*Lancet*.

## ON THE TREATMENT OF ERYSIPELAS BY BANDAGING.

BY JAMES ALLAN, ESQ.

In this short communication the author advances nothing new; but we think the profession much indebted to him for recalling attention to a practice which we regard as of much practical importance, and which is much less practised than it ought to be. We are convinced that the principle of *pressure* to inflamed parts is capable of more extensive application than it has hitherto received. A striking instance of its value in a disease to which it had not been previously applied, was recently communicated in this Journal, (see Dr. Fricke, on the Treatment of Orchitis, vol. ii. p. 253;) and we observe in recent periodical works several practical testimonies in its favour. Mr. Allan relates three cases,—two of erysipelas in the lower extremities, and one in the face; in all of which the application of the bandage was of speedy and permanent benefit; the pain caused by it being of very short duration. He also informs us that he has found bandages of very great service in removing the pain and swelling of joints which have been affected with acute rheumatism, after the reduction of the acuter degree of inflammation.—*British Annals of Medicine*, Jan. 27, 1837.

## ON THE TREATMENT OF HYDROCELE BY ACUPUNCTURE.

In the *Lancet* of May 7th, 1836, Mr. Lewis communicated the interesting and important fact, that hydrocele might be cured by a single puncture with a fine needle. He says “a drop of fluid oozes out on withdrawing the needle, and in three days the swelling will completely disappear, no matter in what quantity the fluid may have been collected.” It appears that the effect of the operation is not to evacuate the fluid through the puncture, but to cause its absorption. He informs us that, out of upwards of fifty cases, there has not been a single instance of failure, nor any consecutive inflammation. It appears that this mode of treatment is applicable to other cases of circumscribed dropsy; and Mr. Lewis informs us, that Dr. Thomas Davies finds it successful in removing fluids from the chest. Mr. L. says that the needle used in this operation “cannot be too fine, provided it be strong enough to penetrate through the integuments; for, the smaller the puncture, the less pain and inflammation ensue.”—*Lancet*, January 14, 1837.

*Method of Benjamin Travers, Esq.*—This is essentially the same operation described in the preceding extract, but somewhat modified. The following is Mr. Travers's own account of his mode of proceeding, and the result of his experience of the practice.

“In the spring of 1836 I commenced the practice of the operation; first, making a single puncture with a trochar; secondly, with a fine sharp-pointed probe; thirdly, with an acupuncture needle of the largest size; and then planting several punctures at equal distances, according to the bulk of the hydrocele. A drop or two of fluid escaping at the several needle orifices, a rag dipped in cold lotion was laid on the part, and the general result was more or less œdema of the scrotum, and in three days a total disappearance of the swelling. I soon ascertained that it was not by adhesive or any other mode of inflammation that the change was effected, but that the tunica vaginalis was left perfectly free and natural in its relation to the testis, and the scrotum of its proper weight, size, and figure, so that relapse was more to be apprehended. I was at first impressed with the idea that the tense condition of the tunic was essential to the curative effects of the puncture, and thus explained the difference of result from that obtained by complete evacuation and collapse of the sac. But this opinion I have had occasion to modify, finding that a freer discharge than could be obtained by the round needle, and the consequent partial collapse of the sac, was on the contrary more immediately and certainly productive of the infiltration of the cellular membrane, and consequent absorption of the fluid. I have therefore

since employed a very fine trochar, smaller than any in common use, as the preferable instrument. My mode of proceeding is to put the scrotum on the stretch, in front of the testis, by embracing it with the extended thumb and fore-finger of the left hand; and placing the patient opposite a window on which the sun falls, or at all events a strong light, I command the view of the transparent bag so perfectly as to avoid veins and any point of accidental adhesion or thickening, which is always marked by a corresponding opacity. The punctures are made in a perpendicular direction and in quick succession, about equidistant from each other, while the tunic is kept tense by graduated compression. Of several cases thus treated some have remained cured; others, apparently cured, have relapsed after a fortnight or three weeks, and one after three months; but I do not consider this a fair criterion of the value of the practice, because from the shape and size of the acupuncture needles chiefly used in these cases, the points on which I believe the success of the operation mainly depends were not accomplished. These are, a freer collapse of the sac by the removal of a sufficient portion of the fluid which the trochar puncture ensures, and the more complete diffusion of the remainder into the surrounding cremaster and cellular tunics, obtained by the multiplication of the punctures, while the tension of the sac is preserved. On the third day the fluid is absorbed, and the two sides of the scrotum are uniform: indeed, this is sometimes the case on the second day; but if the punctures are so small as not at once sensibly to reduce the bulk of the swelling, a single drop only exuding at each orifice, the reduction is generally much slower, or even fails altogether.—*Med. Gazette*, February 11, 1837.

*Mr. Keate's claim to the discovery.*—Mr. Travers imagined that he had anticipated Mr. Lewis in this mode of treating hydrocele; as he says he first conceived the idea of it in 1835, and mentioned it in his surgical course of lectures, previously to the publication of Mr. Lewis's first letter. In a subsequent communication in the *Lancet* of February 18th, Mr. Lewis informs us that he had performed the operation two years before the time mentioned by Mr. Travers. However, a letter in the *Medical Gazette* of the same date, from Mr. Keate, of Albemarle street, deprives both these gentlemen of the honour of having first employed this practice. The following extract from Mr. K.'s communication leaves no doubt on this head.

"While I do not mean to intimate any doubt of the same ideas having occurred to each of these gentlemen without any knowledge of the other's theory or practice, or of any previous operation of the kind, I trust it will not be offensive to either of them if I assure you that the plan and the practice have been known and acted on for very many years by myself, and I dare say by others. By one other person I know it was performed I dare say twenty years ago, namely, by a friend of mine, who for some years practised as a physician in this town, and is now living in retirement in the country. This gentleman performed the operation on *himself*, as he was nervous about the injection, and fancied, as he said, that if he could convert ascites into anasarca, absorption from the cellular structure might cure the malady; and in his own case it was perfectly successful. At his suggestion I tried it frequently, both at the hospital and in private practice; sometimes successfully, but more frequently the collection of fluid in the sac returned, and I generally found the patients impatient of the numerous punctures, and of the time required for the absorption. I remember talking to Sir Astley Cooper on the subject, and, as far as my recollection serves me, the plan appeared not to be new to him."—*Med. Gazette*, February 18, 1837.

## ON PESSARIES, AND THE RADICAL CURE OF PROLAPSUS VAGINÆ ET UTERI.

BY PROFESSOR DIEFFENBACH.

This distinguished surgeon has long discontinued the use of pessaries in his own practice. To them he ascribes the occurrence of many diseases of the vagina and uterus, as well as of the neighbouring parts; and although he admits

that there may be cases in which their use is likely to be beneficial, he considers that such cases are comparatively very rare. He was led to adopt the mode of practice which he here recommends, by seeing the case of a woman, the subject of prolapsus of the vagina and uterus, in whom parts of the vagina sloughed, during its state of prolapse: the uterus and vagina were replaced whilst granulation was going on, and the result was a complete cure of the disease. The first case with which Dieffenbach met, after this, on which he was determined to imitate the natural process, was that of a woman with prolapsus of the uterus, which could be easily replaced, but as easily prolapsed, when it was not kept in by a sponge.

The operation was thus performed. The bladder and rectum were emptied; the uterus was made to prolapse, and a portion of about the size and shape of a hen's egg was removed from the left side of the vagina, the sharper end of which was directed backwards, the opposite end forwards, and came in contact with the nymphæ. The fold was then seized with a pair of forceps, the uterus being previously pressed somewhat backwards to take off the tension of the vagina, and then dissected out with a slightly curved scalpel. The same process was repeated on the right side. The wound was cleansed, and at its hinder part two sutures were applied, the uterus was next replaced, and three other sutures were applied within the vagina. Had all the sutures been completed before the attempt was made to replace the uterus, it is possible that its reduction could not have been effected. Some little irritation followed, which ceased, however, on the removal of two of the sutures from either side. On the sixth day, all the sutures had separated.

Since the time at which Dieffenbach performed this operation, he has repeated it very often. He now employs a smaller number of sutures; usually only two, and never more than three. In many cases he uses no sutures at all, as the borders of the wound in the vagina mostly lie close in contact after the uterus has been replaced. The suture is required where there is great relaxation, and a want of irritability of the vaginal membrane; on the other hand, when the individual is robust and the vagina thick, it is better to dispense with sutures. When the surface of the vagina is mortified, it is necessary to fill it with charpie. Tepid mucilaginous injections should be used for some days, and after these, cold water. If, when cicatrization is going on, there is no evident narrowing of the vagina, a compress of charpie smeared with a resinous ointment, and the repeated application of the lapis infernalis, should be employed.

Dieffenbach has often removed the fold from the vagina after having replaced the uterus, by drawing a portion of the former outwards, and cutting it off by a knife with a sawing motion. This is a far easier mode of operating, but great care is necessary not to injure the bladder or rectum, which may happen if the fold of vagina, when tightly stretched by the forceps, should be cut off too near its base. Sutures are not employed in this case.

The position of the patient in the operation above described, should be the same as that for lithotomy. The state and relations of the rectum and bladder with the vagina and uterus should be ascertained, previous to the operation; of the former, by means of the finger, of the latter, by Desault's silver catheter. The catheter sometimes draws off a quantity of retained urine; the evacuation of the bladder being often rendered very difficult by the prolapse of the uterus.—*Medicinische Zeitung*, No. 31. 1836.

**ACUTE OPHTHALMIA TREATED BY SUCCESSIVE BLISTERS OVER THE EYELIDS.**—An account of this practice by M. Velpeau is going the rounds of the European journals, as if it were new and original with him. Every American surgeon and physician knows that this method of treating acute ophthalmia was introduced a quarter of a century ago, if not earlier, by Dr. Physick, and practised by him and others, both in hospital and private practice, with success.



## MIDWIFERY.

## ON THE USE OF THE PLUG IN CASES OF PLACENTA PRÆVIA.

By DR. ALBERT, of Wiesentheid.

**CASE.** A robust, plethoric woman, mother of seven children, was attacked with slight hemorrhages from the vagina, which recurred every three or four days, from the latter end of the eighth to the middle of the tenth month of her pregnancy, when the discharge became much more profuse. The placenta was found centrally situated upon the os uteri, which was dilated to about the size of a shilling. Although she was not exhausted, yet, as her condition was not free from danger, Dr. A. prepared a plug of fine linen, which was oiled, and passed up the vagina against the os uteri; the vagina was also stuffed with charpie, and the whole secured by a proper bandage. The patient was desired to remain quiet in the supine posture, with her knees together, and she was left for some hours under the charge of a midwife, with proper instructions. After a considerable period, Dr. A. was again called; expulsive pains having come on, during which the plug produced much straining and tension. On removing it, the liquor amnii escaped, and a small quantity of blood in clots. The right edge of the placenta was detached, and hung down against the left side of the vagina. The os uteri was fully dilated, and the largest circumference of the head had passed through it. The child was expelled in about half an hour; the placenta followed immediately, and nothing occurred to disturb her getting up. The child was alive and active.

[We do not approve, says the British and Foreign Medical Review, from whose pages the above article is obtained, of the plug used by Dr. A., although sanctioned by Mr. Burns's authority. It is far inferior to the sponge plug, as recommended by Dr. Dewees. This is introduced and removed with far greater ease, and, being much softer, is retained in the vagina without inconvenience by the patient. Our objections to the linen plugs are illustrated in Dr. A.'s next case, where it required to be altered twice before it could be retained by the patient.]—*Neue Zeitschrift für Geburtakunde*, Vol. iv. No. 1 and 2. 1836.

## TWO CASES OF COMPLETE RECOVERY FROM LACERATION OF THE POSTERIOR PART OF THE VAGINA AND CERVIX UTERI.

By J. TOOGOOD, Esq., Surgeon to the Bridgewater Infirmary.

These cases are interesting, from the rareness of recovery after such an accident. They are related with commendable brevity. In the first case there was "very extensive laceration of the posterior part of the vagina, which extended to the cervix uteri:" both Mr. T. and another surgeon, believing the case hopeless, "passed the hand freely through a large rent into the cavity of the abdomen, and felt the different viscera distinctly, and the abdominal aorta." Although given up, this woman gradually and rapidly recovered. Mr. T. is disposed to attribute the recovery to the great attention paid to the case, and to the omission of bloodletting on the accession of reaction with abdominal pain, &c. He was so satisfied that the loss of even a small quantity of blood, although attended perhaps with immediate relief, would in all probability have been fatal, that he "determined to trust to opium, cordials, nourishment, and perfect quiet;" and the result seemed to justify the treatment.

In the second case, there was also "a considerable laceration of the posterior part of the vagina, in which the cervix uteri was involved, and the intestines were lying in the vagina." The treatment is not given in detail, but it would appear that large opiates were the early remedies depended on. This patient also completely recovered.—*British Annals of Medicine*, Jan. 20, 1837.

## HYGIENE.

## COMSTOCK'S VOCAL GYMNASIUM AND LYCEUM FOR ELOCUTION.

It is not necessary that a man should be a stammerer, in order to be aware, from personal experience, of his imperfection in vocal utterance and speech. We are taught to read and to express ourselves grammatically in conversation; but how few learn suitable intonation, and a full and a distinct utterance,—by which speech obtains much of its charm and acquires often all its influence. Graceful gestures in walking and dancing, and in presenting one's self in company, are thought by many to be of paramount importance; and hence, as a matter of course, the majority of young persons of both sexes are placed under the direction of a teacher of dancing. And yet, after all, what are the graces of manner compared to the melody of voice; and how imperfect the address of the otherwise accomplished gentleman or lady, without full and mellifluous speech. Nature here, as in all that concerns either bodily or mental endowment, does, it is true, establish great differences amongst individuals. One person has, naturally, a musical voice, as it is called; another a harsh or somewhat dissonant one. But still, education possesses, we also know, a good deal of plastic power; and in no case is the influence of physical education more evident than in the strength which exercise gives to the muscles in general, and in the agility and grace which practice imparts to the movements of the limbs; as in the evolutions of the dance, and on the tight rope, &c. On the same principle precisely, without any charm, magic or mystification, can the muscles which, by their successive or alternate and combined action, give rise to voice and speech, be educated into strength and measured and harmonious movement, and produce clear and full intonation, distinct articulation, and emphatic utterance.

This particular department of muscular exercise and education, has greater claims on our time and attention than any other. The organs of speech, with a few unfortunate exceptions, are possessed by all mankind; they are in constant use by all,—their functions are of the highest moment to all, whether for the display of the charms of song and poetry, the persuasion of oratory, the invocation of prayer, and the numberless exchanges of opinion and expression of the affections and emotions in social intercourse. The most rigid puritan or methodist, who would regard with distaste, perhaps horror, the exercises of the dance, and attach no importance to the graces of bodily movement, will still be as naturally and properly desirous of cultivating the voice, as the greatest stickler for worldly accomplishments. He does it in learning to sing the praises of his Maker, and when engaged in the solemn exercises of prayer and exhortation.

With the other sex, the charm of voice is a powerful means of persuasion and control. It gives to woman much of her influence—an influence depending on the mildness of her manner, and her soft and musical tones, displayed in the language of sympathy, entreaty, and of kind remonstrance. Her's is the privilege and the duty to be at the side of the suffering invalid, in infancy, in youth, and in mature age; to comfort the mourner, and to aid the poor and distressed. And what makes the potions to the feverish patient less nauseous—what gives balm to the language of resignation, and imparts the glow of pleasure to the wan and weary beggar, when she is, in each case, the ministering angel! Much is in the pitying look, much in the inclining gesture and softened manner; but still more in the tones of her voice, her low and smoothly uttered words of solace and of hope.

Why then should this instrument, which is capable of giving out such exquisite

site music, be jarred and discordant in its tones, through early neglect and bad habits. It has been said by European travellers of both sexes, that American women would be in all respects charming, but for their want of melody of voice in common speech. Surely this stigma, for such in one sense it is, might be, and ought to be removed, just as the flutter, agitation, and jerking movements of the body and limbs would be corrected, by appropriate exercise and training under tasteful guidance and precept.

Still more necessary is this kind of education where the imperfection amounts to disease, as in hesitancy, stammering, and other imperfect articulation. The cure requires time, patience on the part both of the invalid and of the vocal doctor, and practice in the manner which scientific experience, not impudent and boastful quackery, has shown to be most serviceable, so as to give that confidence which is the result of conscious ability. The timidity and feeling of embarrassment of the stammerer, are both effects and sustaining causes of his impediment. So soon as he knows that his vocal organs are capable of obeying the commands of his will, and of giving expression to his thoughts, his mind acts with more energy and intentness; and he no longer allows himself to be trammelled in his speech, by the weak, tremulous, and convulsive movements of the muscles, which, under less energetic volition, used to be so common with him.

When we wrote the caption of this article, we did not intend to direct the attention of our professional brethren merely to the existing evils, but were desirous to apprise them of the fact, that one of our own number has for many years past concentrated his talents and his time exclusively to the subject of Elocution, both in its hygienic relations with fluent speech in private and public, in the social circle and at the bar, the pulpit and the legislative hall; and, also, in its curative character, to remove stammering and other impediments to clear and distinct articulation and utterance. The gentleman to whom we refer, is Dr. Andrew Comstock of this city. He makes no pretension to a knowledge of any specific for the cure of stammerers, nor does he attempt to shroud his method in unintelligible jargon, nor to conceal it from public and scientific investigation, by swearing his pupils to secrecy. All these are arts and tricks unworthy of the literary and professional character, and disreputable, above all, to him who professes to be a teacher, and in whom manly sincerity ought ever to shine conspicuously, as an example to those under his charge.

In Doctor Comstock's Institution, "Elocution is treated as a science as well as an art. The various movements of the voice, both in speech and song, are illustrated by original diagrams, and by oral instruction. The exercises give the pupil complete command of the muscles of articulation, extend the compass of the voice and render it smooth, powerful, and melodious. They not only call forth all the energies of the vocal organs, correct stammering, lisping, and other impediments of speech; but they invigorate the lungs, and consequently fortify them against the invasion of disease." To a certain extent, general is associated with vocal gymnastics; and one great cause of embarrassment from awkwardness of manner and posture in the stammerer, is removed by the substitution of a free and easy carriage and movements of the arms in gesticulation. In other words, all the voluntary muscles of the trunk and limbs move in the order required by the will, synchronously and harmoniously with those of the voice.

In proof that Doctor Comstock is above the petty arts of making elocution a mere craft and mystery, we have now before us, *Remarks on Stammering, from a Lecture on Elocution, delivered before the American Lyceum, May 6, 1837*, in which he explains the chief features of his system, and indicates the kind and order of exercises to be pursued for the cure of Stammerers. But like all other branches of professional knowledge, this can only be rendered efficient and applicable to the cure of individual cases by a practitioner, a person who directs knowingly and understandingly, and superintends carefully and patiently, the treatment, making such modifications as seem to be called for by his own personal experience and the idiosyncrasy of the patient.

## ON THE RESULT OF EXPERIMENTS ON THE WEIGHT, HEIGHT, AND STRENGTH, OF ABOVE EIGHT HUNDRED INDIVIDUALS.

BY PROFESSOR FORBES.

These experiments were made upon students in the University of Edinburgh, chiefly between the ages of 14 and 25, and were intended to illustrate the general inquiry as to the law of physical development with age, but more particularly to afford data for instituting comparisons between different nations. For this purpose, throughout these experiments, natives of Scotland, England, and Ireland, were distinguished; and though the numbers belonging to the two latter countries were comparatively small, still the general coincidence of results, as to the three elements of weight, height, and strength, gives some confidence even in that part of the inquiry.

The weights were expressed in pounds, including clothes; the heights in inches, including shoes; the strength was determined in pounds by Regnier's dynamometer.

All these data for different ages were expressed by projection upon ruled paper, and interpolating curves used to deduce the mean results, which were then tabulated. A comparison was instituted with M. Quetelet's conclusions, from experiments on a similar class of individuals in Belgium. The following deductions were made:—

1. That, in respect of weight, height, and strength, there is a general coincidence in the form of the curves with those of M. Quetelet.

2. In Britain, the progress towards maturity seems greater in the earlier years (14 to 17) than in Belgium, and slower afterwards. This seems more strongly indicated in the English than the Scotch curves.

3. The superior physical development of natives of this country above the Belgians is very marked. In strength it is greatest (one fifth of the whole); in height least.

4. So far as the English and Irish curves can be considered as correct, they indicate that the English are the least developed of the natives of Britain at a given age, the Irish most, the Scotch maintaining an intermediate place.

5. The maximum height is barely attained at the age of 25.

6. All the developments increase during the period of observation (14 to 26 years of age), and all increase more slowly as age increases. Hence the curves are all convex upwards, (the abscissæ or ages being projected horizontally).—*Athenæum*.

## AN EXPERIMENTAL INQUIRY INTO THE MODES OF WARMING AND VENTILATING APARTMENTS.

BY ANDREW URE, M. D.

The author, having been consulted by the Directors of the Customs Fund of Life Assurance, on the mode of ventilating the Long Room in the Custom House, and deeming the subject one of great public interest, was induced to lay the result of his observations and experimental inquiries before the Royal Society. In this room, about two hundred persons are busily engaged in transacting the business of the Institution. All these persons are found to suffer more or less from ailments of the same general character, the leading symptoms of which are a sense of fulness and tension in the head, flushing of the face, throbbing of the temples, giddiness, and occasional confusion of ideas, depriving them of the power of discharging their duties, in which important and frequently intricate calculations are required to be gone through. These symptoms of determination of blood to the head are generally accompanied by coldness and languid circulation in the feet and legs, and by a feeble, and frequent, as well as quick and irritable pulse. On examining the air of the room by appropriate instruments, the author notices more especially three circumstances in which it differs from the external air: first, its temperature, which is maintained with

great uniformity within a range of 62° to 64°; secondly, its extreme dryness, which on one occasion, measured by Daniell's hygrometer, was 70 per cent.; and thirdly, its negatively electrical state, as indicated by the condensing gold leaf electrometer. In all these qualities the air respired by the inmates of the room bears a close resemblance to the pestilential blasts of wind which, having passed rapidly over the scorching deserts of Arabia and Africa, constitutes the *Simoom* of those regions, and is well known by its injurious effects on animal and vegetable life. To these noxious qualities is superadded, as in the air of all rooms heated through the medium of cast-iron pipes or stoves, an offensive smell, arising partly from the partial combustion of animal and vegetable matters always floating in the atmosphere of a town, and perhaps also from minute impregnations of carbon, sulphur, phosphorus, or even arsenic, derived from the metal itself. The author expresses his surprise that in the recent report of the Parliamentary Committee on the subject of ventilation, no reference is made to the methods employed for that object in factories, although they afford the best models for imitation, being the results of innumerable experiments made on a magnificent scale, with all the lights of science, and all the resources of the ablest engineers. He proceeds to describe these methods; and is then led to investigate the comparative efficiency, with a view to ventilation, of a draught of air resulting from a fire and chimney, and that produced by the rotation of a fan-ventilator. He shows that a given quantity of coal employed to impart motion to the latter, by means of a steam-engine, produces a ventilating effect 38 times greater than can be obtained by the consumption of the same fuel in the ordinary mode of chimney ventilation. Accordingly, he strongly advises the adoption of the former in preference to the latter: and inveighs against the stove-doctors of the present day, who, on pretence of economy and convenience, recommend the slow combustion of a large body of coke, by means of a slow circulation of air; under which circumstances, it is well known to chemists that much carbonic oxide, a gas highly pernicious to all who respire it, is generated; accompanied, at the same time, by a comparatively small evolution of heat. In order to obtain the maximum quantity of heat from a given mass of fuel, its combustion, he observes, should be very vivid, and the evolved caloric should be diffused over the largest possible surface of conducting materials; a principle which has been judiciously applied in several French factories. It has been proved that work-people employed in calico-drying rooms, heated according to the plan here reprobated, become wan, emaciated, and diseased; while in rooms which the air is more highly heated by means of steam-pipes, they preserve their health and florid complexion.—*Ibid.*

#### STATEMENT OF THE RECEIPTS AND EXPENDITURES OF THE PHILADELPHIA BOARD OF HEALTH FOR THE YEAR 1836,

AS EXAMINED AND COMPARED WITH THE TREASURER'S ACCOUNT.

To balance in Treasury, January 1st, 1836,	.	.	\$3,032 07
Amount of (fees) health fees on foreign vessels,	.	.	3,100 00
Do. do. coasting vessels,	.	.	3,136 64
Do. Head money on passengers,	.	.	2,343 50
Do. for removing nuisances.	.	.	283 09
Do. received from Lazaretto for boarding,	.	.	177 00
Do. City Hospital,	.	.	33 82
Do. do. for rent, &c. Poudrette Lots,	.	.	246 25
Do. do. from County Commissioners, as per act of Assembly,	.	.	4,000 00
Certificate of Loans received from County Commissioners for damages on Broad street,	.	.	470 00
			<hr/>
			\$16,822 37

By Health Office.—For salaries paid Health Officer, Port Physician, Solicitor, Inspectors of Vessels, Messengers, Superintendents of Lots, Bargemen, stationery, printing and incidental expenses,	\$5,483 14
By Lazaretto.—For salaries paid Physician, Quarantine-Master, Steward, Nurses, Bargemen, Gardener, Labourers, Servants and incidental expenses,	5,216 53
By City Hospital.—For salaries paid Physicians, Matrons, Medicines and incidental expenses,	1,933 16
By Poudrette Lots.—Salary to Superintendents, &c.	924 19
By Nuisances.—Paid for removing nuisances, for which sundry persons are charged,	860 81
By Estate of S. R. Franklin, late Health Officer, deceased, for costs paid,	4 75
	<hr/>
	\$14,422 58
On hand January 1st, 1837.—By Certificate of County Loan,	470 00
By cash balance,	1,929 79
	<hr/>
	\$16,822 37

Fourteen hundred dollars or more of the above amount for removing nuisances, for Poudrette, and from the City Hospital, has been refunded to the Board, which deducted from fourteen thousand four hundred and twenty-two dollars and fifty-eight cents, shows the expenses of the Health Establishment for 1836, to be about thirteen thousand dollars.

By order of the Board of Health,  
SAMUEL P. MARKS, Clerk.

*Introductory Lecture on Acclimation. Delivered at the opening of the Third Session of the Medical College of Louisiana. By E. H. BARTON, M. D., Professor of the Theory and Practice of Medicine, Member of the Medical Board of Louisiana, Administrator of the Charity Hospital, &c. &c. New Orleans, 1837.*

DOCTOR BARTON, in this lecture, points out clearly and succinctly the chief conditions on which a person from the north may hope to enjoy health, and, with it, the means of personal and social comfort and of usefulness. He adds his own experience to that of so many others, who, both in former periods, and still more of late years, have touched on the subject of tropical hygiene, in recommending abstinence from all stimulating and intoxicating drinks, and especially ardent spirits. A few extracts will show the scope and application of his opinions.

DIET.—“The kind of *diet* required during the *process of acclimation* is clearly inferrible from the position laid down with regard to calorification, and has been, in general, mentioned. It is to be of the lightest kind, of plain unirritating vegetables, of little animal food during the first summer, and that fresh—and avoiding much indulgence in salt food. The advice of using salt food in hot weather, given by a distinguished professor, now no more, has cost thousands of lives, some to my own personal knowledge. The second summer a little more freedom may be indulged. After acclimation, a more generous living is advisable. I have little doubt that good living is conducive to health, as giving that degree of tone to the system that enables it to resist the influence of morbid causes.

“The same general principles are applicable to DRINKS, absolutely forbidding

those of a stimulating nature, as increasing the range of those organic actions, and particularly those of the gastric system, already over-stimulated by the climate. Bland and acidulated drinks, (where they agree,) and the Seltzer water, are highly refreshing and proper. The consequences of indulging in stimulating drinks in a warm climate have been recently shown on another occasion.\* The indulgence, particularly the intemperate use of ardent spirits, retards acclimation, multiplies the chances of febrile excitement, and lessens the prospect of passing the acclimating fever with safety. It has been shown in the address just referred to, that they act in a direct line with and aggravate all the injurious influences of a hot climate and season. This influence was exhibited in a remarkable manner from the records of the Charity Hospital, (the only data of the kind in this country.) From these it appears that the mortality in that house in 1835, amounted to 1226; of those 940 or four fifths! were produced by intemperance, and that only nine of this number had passed through their acclimation! a more pregnant and condemnatory fact of the use of stimulating drinks in a hot climate could not be cited. I know of no circumstances in which they are *necessary* for health, whether from exposure to wet, heat, or fatigue, and believe them to be injurious and only a counterfeiter of good in all."

**HABITS OF LIFE.**—"With regard to the *habits of life*, the errors have not been less serious than extensive; I cannot stop to enumerate them in detail; they may be inferred from the advice I am about to give. *Early rising*, to enjoy the delightful freshness of the morning breeze, is highly conducive to health. As early breakfast is the only 'fortifying' the stomach requires.

"*Exercise* is of great importance in this climate. It should be taken during the early morning and evening hours, avoiding the midday sun. The night air is only injurious to those who have been exposed much to the sun and excessive perspirations during the day; otherwise it is grateful and safe, particularly if in motion, carefully avoiding the extent of chilliness. Probably there is no habit more universal or that would strike a stranger more forcibly, on visiting this country for the first time in summer, than the general habit of setting out and indulging in the evening air, (and particularly in this city,) and with perfect safety, under the restrictions just laid down, in defiance of all the predictions of the miasmatisers."

The daily use of the bath is highly recommended by Dr. Barton—but the temperature is not specified. May we not supply the omission, by saying the cool bath from 56 to 70 F., if taken early in the morning—and the tepid from 80 to 90, if used in the course of the day, and after the person has perspired freely or been fatigued by exercise out of doors.

After dwelling on some points of public hygiene, such as *paving the city, ventilation, &c.*, the Professor gives the following approximative estimate of the relative frequency and proportionate mortality of the

**CHIEF DISEASES IN NEW ORLEANS.**—"It is impossible to obtain correct data in order to give precise details upon the subject of our own diseases—the nearest approach to it is derived from the records of the Charity Hospital, which furnishes about 1 in 3.86 of our annual mortality. In comparing the detail derived from that source, it will result, that pulmonary consumption, which carries off in the northern cities 1 in every 5 or 6 of their deaths, is here fatal to about 1 in 50, few of which doubtless originated here.† Of pulmonary diseases in general, which in the northern cities carries off near 1 in every 4 of their deaths, is here fatal to about 1 in 30, of which about one third were acclimated,‡ fur-

\* "Vide Address 'On the applicability of stimulants in a hot climate,' by the author."

† "It is proper to state that these data are not only imperfect, but vary greatly in different years. In some years, the cases of phthisis to the entire mortality in the house is but 1 in 80, and in another in 14, (in 1832)."

‡ "This is very difficult to ascertain from our imperfect records. From the same source I have procured most of the above data, it appears that in a series of years, of

nishing, in fact, a ratio of pulmonary diseases in the entire mortality of that house, probably unprecedented in any country, and in private practice it is probably less.

"Of the class *fevers*, the great mass of our mortality consists,—these records show the proportion of 1 in every 2.92 of the entire mortality of the house, and the estimates are taken from years of the greatest mortality that ever occurred in this country. But it must not be forgotten that a large proportion of this consists of the unacclimated—the exposed and besotted, of which New Orleans has a larger ratio probably than any city in the Union. From a statement from the books, it appears that there were actually of unacclimated individuals nearly four fifths of the whole. The mortality of the acclimated population in the house from fevers, to the entire mortality is 1 in 29.02, and of the unacclimated there appears a proportion of 1 in 6, and the cost of acclimation through fever, so far as these returns furnish an estimate, is annually about 131—and if the relative proportion in this house to the entire city mortality be correct in this respect, (in fact much the largest portion die in the Charity Hospital,) the annual mortality in the city through acclimation may be estimated at about 507, and be it recollected, however, that the estimate embraces one of the epidemic years. (1832.)"

**PERIOD OF ACCLIMATION.**—"The inquiry so often made—how long a period is required for the acclimating process, and what assurance have we that it is passed?—is not so easily answered, to a mathematical certainty, but sufficiently so for all practical purposes. There are various compound considerations to influence it—the temperament of the individual—his habits and modes of life—the more or less northern his place of departure, &c. Following the directions and governed by the principles here laid down—three years, at the farthest, may be considered a fair period for this much valued immunity. But it may be acquired in less,—a severe or protracted attack of a febrile disease may reduce the tone of the system to that condition to which a long residence in a warm climate subjects us all.

**PROPHYLAXIS.**—"In the north the most active apparatus of the system is the respiratory, on account of the great demand for caloric to enable the inhabitants to withstand the influence of cold on their systems, and hence the predominance of their pulmonary diseases over others. But on coming to the south, where this increased temperature is no longer required to preserve the integrity of his organization, this active demand on the respiratory system is diminished, and transferred to other systems, now called into more active operation—viz: the circulatory and gastro-intestinal—1st, from the direct effect of heat in awakening the great organ of the circulation, and its numerous branches into increased activity; and 2dly—from the immediate influence of this increased temperature on the skin, and through it on the gastro-intestinal surface, with which it is associated in the closest sympathetic connexion, and hence the result—fever and intestinal affections, the great outlets of human life in southern countries. The character of these latter affections—the cause and the mode of operation, will all point to a course of treatment that is as rational and satisfactory in theory, as it has been successful and conclusive from experience—it is the sedulous avoidance of each and every gradation of stimulation to organs that are now threatened with disorganization from its excess. I speak now especially to the unacclimated: when, however, the system has become worn down by the debilitating influence of a protracted continuance of an elevated temperature, an order of stimuli, then, of a permanent kind may be advisable. In an admission of this kind, however, I exclude the necessity of the diffusible stimulants of any kind whatever, ardent spirits especially."

the phthisical patients in that institution, the average of the acclimated to the unacclimated were as 8 to 20. This, however, can hardly be considered correct, many persons coming to this climate, for its generally acknowledged benefit in pulmonary affections, with strong phthisical predispositions and liabilities, which may and do ultimately become developed, after they have been here three years (or 'acclimated,') and hence add materially to the number."



*A Manual of Phrenology, &c.* By ALEXANDER A. YOUNG. Philadelphia. Henry Perkins. 1837.

THIS small pamphlet, of thirty-six pages, is chiefly made up, as Mr. Young, its author, tells us in the title page, of extracts from standard writers on Phrenology. It will answer the purpose for which it was designed—to give to those curious on the subject some elementary notions preliminary to a more extended reading and ampler illustrations by lectures. We notice one or two oversights, which although not affecting the intrinsic merits of his compilation, might induce some, who are not aware of his desire to do justice in the premises, to suppose that he had not referred to the original works. Of these one is the incorrect orthography of Mr. Combe's name, by the omission of the final *t*; and the other is confounding Mr. George Combe, the celebrated author of the *Essays and Elements of Phrenology*, and of the work on the *Constitution of Man*, with his brother *Doctor Andrew Combe*, author of works on *Mental Derangement*, *Physiology*, and *Digestion*.

Mr. Young, in his brief Preface, tells us, that he "has concluded the work with some original remarks on the coincidence that pervades History, Scripture, and Phrenology, which he humbly conceives will not be uninteresting."

*Transactions of the New York State Medical Society.* Volume III. Part II. Albany. E. W. & E. Skinner. 1837.

THE contents of this volume, the first fifty-two pages of which by the way are wanting in the copy sent to us, are both varied and interesting. We have not room at present for more than this expression of our good opinion, and of our intention to notice hereafter more particularly the several articles, from four to fourteen, and an Appendix consisting of ten shorter ones. The three articles which are left out in our copy are, according to the Table of Contents prefixed, the Annual Address by Dr. Steele, Medical Topographical Report of the County of Tompkins, Report of a Committee of the Society on the Varioloid, and the means of counteracting its progress.

#### MEDICAL SCHOOLS.

OUR last Number had gone to press before we were apprised of the complete reorganization of the TRANSYLVANIA MEDICAL COLLEGE, which we now subjoin:—*Anatomy and Surgery*, Dr. Dudley, with Dr. Bush as Adjunct Professor of Anatomy; *Obstetrics and Diseases of Women and Children*, Dr. Richardson; *Materia Medica and Medical Botany*, Dr. Short; *Institutes of Medicine and Medical Jurisprudence*, Dr. Cross; *Theory and Practice of Medicine*, Dr. Eberle; *Chemistry and Pharmacy*, Dr. Thomas D. Mitchell.

UNIVERSITY OF VIRGINIA. Dr. Griffith, late of the Maryland University, has received the appointment of Professor of the Theory and Practice of Medicine, Obstetrics, and Medical Jurisprudence; and Dr. Cabell, of Richmond, Va., that of Professor of Anatomy, Physiology, and Surgery.

**UNIVERSITY OF MARYLAND.** The filling up of the vacant chair of Anatomy by the appointment of Dr. *Barley*, was followed by the resignations of Drs. *Potter*, *Hall*, *Smith*, *Griffith*, and *Mr. Ducatel*, of the chairs which they respectively held. Since that event, the Trustees have appointed Dr. *Henry Howard* of Montgomery county, Md., for the chair of Midwifery and the Diseases of Women and Children; Dr. *Robert E. Dorsey* of Baltimore county, for that of Materia Medica; Dr. *M. A. Finley* of Washington county, Md., for that of the Theory and Practice of Physic; and *W. R. Fisher*, Esq. of Baltimore, for that of Chemistry. Dr. *Ellis Hughes* of Annapolis, has been appointed Demonstrator of Anatomy. There yet remains a Professor of Surgery to be elected.

**MEDICAL COLLEGE OF GEORGIA.** A commendable spirit has been displayed by the Trustees of this institution, in their adding two chairs to the six, which had been previously authorised and filled. The Medical College of Georgia, now furnishes an extended and comprehensive course of instruction, from which older institutions might take salutary hints for their government. There are eight professorships, and as many distinct branches of medical science; and the collegiate period is during six months. The following are the names of the professors, with the subjects on which they will lecture: Dr. *Dugas*, on *Anatomy*; Dr. *Cunningham*, on the *Principles and Practice of Medicine*; Dr. *Joseph A. Eve*, on *Therapeutics and Materia Medica*; Dr. *Antony*, on *Obstetrics and the Diseases of Women and Children*; Dr. *Paul F. Eve*, on the *Principles and Practice of Surgery*; Dr. *Charles Davis*, on *Chemistry and Pharmacy*; Dr. *Newton*, on *Physiology and Pathological Anatomy*; Dr. *Ford*, on the *Institutes of Medicine and Medical Jurisprudence*.

Doctor Davis had been Professor of Chemistry in the Medical College of South Carolina, and Dr. Newton had acted as Adjunct to Dr. Dugas.

**MEDICAL COLLEGE OF OHIO.** We have not yet heard that the vacancies created by the resignation of Drs. *Eberle*, *Cross*, and *Albin Smith*, have been filled. The two first named gentlemen are now members of the Medical Faculty of the Transylvania University; the latter has taken up his residence in the city of New York, and has received the appointment of Professor of the *Principles and Practice of Surgery*, in the College of Physicians and Surgeons.

**CINCINNATI COLLEGE.** Of the efficiency and completeness of the Faculty of this institution, our readers will have formed a favourable opinion, from the advertisement on the cover of the Ninth Number of the Library and Journal.

We shall probably give, in our next, a notice of the branches taught in some other of the medical schools of the United States, with a designation of their professors. Details of this nature are acceptable to the medical reader, who is often not fully aware of even the names, still less of the organization, of many of these institutions.

**UNIVERSITY OF PENNSYLVANIA.** Without instituting comparisons, which might seem to be invidious, we would merely content ourselves with saying, that in no past time was the Medical Department of our Alma Mater, the University of Pennsylvania, more efficiently organized with reference to all the means and appliances of instruction. In the demonstrative branches, the resources are of the most ample kind. The chemical apparatus is unrivalled, and may be called truly magnificent. The lectures on Surgery are largely illustrated both by paintings and wax preparations, representing morbid structure. The Professor of Midwifery has, also, freely availed of the pictorial art, to aid him in his descriptions of the successive stages and different kinds of labour. These are all represented by paintings of a large size, which are exhibited to the class. The botanical characters and appearance of the recent plant, are displayed by similar means by the Professor of Materia Medica. Of the riches of the Anatomical Museum,—the large models of the senses, brain, &c., and the numerous preparations dry and wet, who, amongst our readers, has not heard!

## MISCELLANEOUS.

ACCOUNT OF A MAN WHO SUBMITTED TO BE BURIED ALIVE FOR  
A MONTH, AT JAISULMER,

AND WAS DUG OUT ALIVE AT THE EXPIRATION OF THAT PERIOD.

COMMUNICATED BY H. M. TWEDELL, ESQ.

I HAVE just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about it before, the time for its accomplishment not being completed: this morning, however, the full month was over, and a man who had been buried all that time, on the bank of a tank near our camp, was dug out alive, in the presence of *Esur Lal*, one of the ministers of the Muharawul, of Jaisalmer, on whose account this singular individual was voluntarily entered a month ago. He is a youngish man, about 30 years of age, and his native village is within five kos of Kurnaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c. and allows himself to be buried for weeks or months, by any person who will pay him handsomely for the same. In the present instance the Rawul put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it certainly deserves to be known.

The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with the tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and moreover, he is sewn up in a bag of cloth, and the cell is lined with masonry, and floored with cloth, that the white ants and other insects may not easily be able to molest him. The place in which he was buried, at Jaisalmer, is a small building, about 12 feet by 8 feet, built of stone; and in the floor was a hole about three feet long, two and a half feet wide, and the same depth, or perhaps a yard deep, in which he was placed in a sitting posture, sewed up in his shroud, with his feet\* turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, five or six feet long, several inches thick, and broad enough to cover the mouth of the grave, so that he could not escape, were then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people placed outside, that no tricks might be played, nor deception practised. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave; Trevelyan's moonshee only running there in time to see the ripping open of the bag in which the man had been inclosed. He was taken out in a perfectly senseless state, his eyes closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument to pour a little water down his throat. He gradually recovered his senses, and the use of his limbs, and when we went to see him, was sitting up, supported by two men, and conversed with us in a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, and was laughed at as an impostor; but Cornet Macnaghten put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried under ground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains in a state of insensibility. His powers of abstinence must be wonderful to enable him to do without food for so long a time, nor does his hair grow during the time he remains buried.

\* Query feet, the word as used in that part of India, is *gor*, and means foot or leg.

I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above.

This letter was written by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. The gentlemen, whose names are mentioned in the letter, are Capt. Trevelyan, of the Bombay Artillery, and Cornet, now Lieut. Macnaghten, of the 5th regiment light cavalry, assistant to the agent to the Governor-General in Rajpootanah.

Some other information I obtained in the course of conversation with Lieut. Boileau, and which I noted down. Lieut. Boileau was unacquainted with the man's name or caste; he believed that he had taken up the life of a Fukeer; he understood that the man had been buried six or seven times, but whether for any period longer than a month he knew not; he did not hear how the man discovered his powers, or when he commenced to practise them. Lieut. Boileau arrived at Jaisulmer, after the interment, and saw the place, described in his letter, in which the man was buried. There was a guard of four or five Chupra-sees, in the employ of the muharawul, as he understood, who were on the watch, to prevent any interference or imposition. The process of burying, and of disinterring, was conducted in the presence of Esur Loll, one of the ministers of muharawul. The day fixed for the disinterment was known to Lieut. Boileau, but not the exact hour. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been inclosed. The moonshee immediately started off a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They waited a few seconds to apprise Lieut. Mackeson, of the 14th regiment, N. I. British Agent for the navigation of the Indus (who had declined to accompany them,) and repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was, his spirit was good, and his confidence in his powers unabated, as in answer to Lieut. Boileau's and Captain Trevelyan's inquiries, he said, "*that we might bury him again for a twelvemonth if we pleased.*" Lieut. Boileau examined, and measured with his walking stick, the grave in the floor of the chamber in which the man had been buried, and also the two slabs of stone which had been used to cover the mouth of the grave. For seven or eight days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He confesses to have great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Muharawul, in the hope of receiving his promised reward, and that tired of waiting until the purse strings of the patron were loosened, he had stolen a camel and decamped.—*India Journal of Med. and Phys. Science.*

#### PSYCHOLOGY.

M. Geoffroy St. Hilaire, the naturalist, has prepared for the Academy of Sciences a series of memoirs, to be communicated by him to that body, on the functions and situation of the soul. He states, that he has no hesitation in treating on this subject—that he feels strong in his own powers, and means, first of all, to examine the nature of the *Spiritus corporeus* of St. Augustin!—*Athenæum.*

## ON TEA OIL.

BY ROBERT D. THOMSON, M. D.

A species of fixed oil, familiarly used in China for the same economical purposes for which olive oil is employed in Europe, has been ascertained by recent travellers in China to be produced in all probability by the tea-plant, or another species of the same natural family. The author assigns reasons for believing that it either is, or may be, obtained from the seeds of various species of the two genera *Thea* and *Camellia*. It has been hitherto almost unknown in Europe. It is when fresh quite free of smell, of a pale yellow tint, without any sediment when long kept. It resists a cold of 40° F., but at 39° becomes like an emulsion. Its density is 927. It is insoluble in alcohol, sparingly soluble in ether. It burns with a remarkably clear white flame. It consists of 75 parts of elaine, and 25 of stearine; whence the author infers its elementary composition to be, oxygen 9.853, carbon 78.619, hydrogen 11.527. He is inclined to think that this oil might prove an important article of commerce in the East, because in its properties it is superior to cocoa-nut oil, and the various other oils prevalently used for burning, or as oleaginous condiments, in Asiatic countries.—*Ibid.*

## HURRICANES.

According to an Antwerp journal, which speaks of the late hurricane, the seven great hurricanes recorded in the history of Europe have all taken place in November, viz.—1st. On the 26th of November, 1282. It united the lake Fiévo to the sea, and formed the gulph now called the Zuyder Zee. 2d. On the 19th of November, 1321. It broke the dykes of Holland, and caused the destruction of seventy-two villages, and more than 100,000 persons. 3d. On the 5th of November, 1430. It occasioned a second rupture of the dykes in Holland. 4th. On the 22d of November, 1686. It a third time broke down the dykes, when twenty-five villages were destroyed, and more than 10,000 persons drowned. 5th. On the 11th of November, 1775, which also occasioned great disasters in Holland. 6th. On the 9th of November, 1800, which extended its ravages all over the continent. 7th. On the 29th of November, 1836.—*Ibid.*

## PLUMBE ON THE DISEASES OF THE SKIN.

OUR SECOND LIBRARY AND JOURNAL YEAR, which begins in November next, will open with the publication of the first part of "*A Practical Work on Diseases of the Skin*, by SAMUEL PLUMBE."

The number and complexity of the diseases of the skin, and the embarrassment which even an otherwise experienced physician often finds in treating them, cannot fail to insure for a work of full and authoritative reference, like the present one, a favourable reception. A knowledge of the subject will be facilitated in the present case by the addition of illustrative engravings, four in number, three of them coloured. The first plate is subdivided into several compartments, and exhibits the characteristic appearance of the most remarkable diseases of the skin. We have just now been shown by the artist employed for the purpose, proof impressions, from which we augur most favourably of the accuracy of the American copies for the Library edition. There is this difference, that the impressions from our plates will be more fresh and distinct than are those in the English volume.

# THE ECLECTIC JOURNAL OF MEDICINE.

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**EDITED BY JOHN BELL, M.D.**

LECTURER ON THE INSTITUTES OF MEDICINE AND MEDICAL JURISPRUDENCE;  
MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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**VOL. I.**

**OCTOBER, 1837.**

**No. 12.**

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## **OBSERVATIONS ON THE STETHOSCOPE.**

**By GEO. BUDD, M.B. F.R.S., Fellow of Caius College, Cambridge.**

[Read at the London College of Physicians.]

At the present time, when the discoveries of Laennec are well known, and when auscultation is generally practised, it may seem almost unnecessary to mention the following circumstances, with which I have ventured to introduce the subject of this paper.

In the several acts of breathing, speaking, coughing, the surfaces within the chest with which the air is brought into contact are by its action thrown into sonorous vibrations, which are transmitted through the substance of the lungs, and thence communicated to the parietes of the chest; and these sounds in their transmission obey the laws that regulate the transmission of sounds generally, and become modified in their intensity, nature, and quality, by changes in the density of the pulmonary tissue—by the presence of different secretions in the bronchial tubes—and by the effusion of fluid into the cavity of the pleura.

Again, the motions of the heart, and the passage of the blood through its interior, are productive of sounds which are transmitted in a similar manner to the parietes of the chest, and which are modified by changes in the volume of the cavities of the heart, or in the thickness of its walls, and by disease of the membrane which envelops it, or of the valves by which its orifices are guarded: and it is found that each of these circumstances produces a modification peculiar to itself, and which is sufficient, in most cases to characterize the condition on which it depends, and to enable us to form an opinion of the state of the contents of the chest, which is the more to be relied on, as resulting from the evidence of physical signs, which it is not in the power of the patient to alter or destroy. The perception of these sounds is, consequently, of the utmost importance to the physician. The simplest mode of obtaining it is by applying the ear immediately on the chest, but from the inconvenience of this method of proceeding, and from its impossibility in some cases, the stethoscope has been invented, which propagates to our ears the vibrations of the walls of the chest, and thus renders

us sensible of them at a distance. By the discovery, then, of the stethoscope, or rather of the mode of investigation to which it is applicable, another man became enlisted for the investigation of diseases of the chest, and the condition of organs, which are excluded from our sight, becomes known to us through the sense of hearing.

The following observations were made with the view of ascertaining how the stethoscope performs this office, and on what conditions its excellence depends.

**Oss. 1.**—If one extremity of the stethoscope be applied to the ear as usual, and the other be brought as near as possible to, without actually touching, the chest of a person, in whom the murmurs of respiration are unusually audible, a sound can be heard.

Now, the vibrations communicated by the parietes of the chest to the air within the stethoscope, must, in this case, be nearly the same as if the stethoscope and chest were in actual contact; very little sound can be lost by diffusion through the interval that separates them, when this interval is very small.

We may then infer, that, in these cases, no vibrations sensible to the ear are communicated from the chest to the air within the stethoscope, but that they are communicated almost solely to the material of the instrument.

**Oss. 2.**—If, in the same circumstances, one extremity of the stethoscope be applied as usual to the chest, and the other be brought as near as possible to, without actually touching, the cartilages of the ear, no sounds can be heard; the slightest contact is sufficient to establish the necessary connexion, and to render the sounds audible.

Hence, in these cases, the vibrations of the stethoscope are not communicated in such a manner as to be sensible to the ear, to the air within the stethoscope. The sounds are therefore communicated from the chest to the material of the instrument, and are thence propagated through the cartilages and solid parts of the ear to the auditory nerve, and may be heard distinctly through the stethoscope by a person, who, from thickening of the tympanum, is deaf to sounds of greater intensity propagated by air.

This property of the solid parts of the ear of transmitting to the auditory nerve the vibrations of solids, may, perhaps, aid us in discovering, in cases of deafness, if the nerve be affected, or if the obstacle be in the tympanum; in the former case, the ear would be insensible of the sonorous vibrations of a solid in contact with its cartilages; and, in the latter, it would perceive them distinctly, though equally insensible of ordinary sounds. The stethoscope is, then, an instrument that establishes a solid connexion between the walls of the chest and the auditory nerve, and that serves to transmit to the latter the vibrations of the former.

The organ of hearing consists essentially in the nerve of hearing, and in an apparatus by which external vibrations are conveyed to it; and we find that in nature this apparatus is modified, so as always to be best adapted to the medium in which the animal lives. In ears which are formed for the perception of sounds in air, the air within the tympanum forms the medium of communication between the external air, which propagates the vibrations, and the nerve of hearing which is destined to receive them, this communication being only interrupted by the presence of thin membranes, which obey the slightest impulse of the air. In fishes, whose ears are intended for the perception of sounds in water, air is no longer the medium of communication, and there is no external appearance of the organ; the nerve is lodged in the cartilages of the head; the vibrations of the water are communicated to these cartilages, which are nearly of the same density as the water, and are by them transmitted to the nerve. And by the stethoscope, which is intended to render us sensible of the vibrations of a solid, we establish a solid connexion between the sounding body and our nerve of hearing, by which we are enabled to perceive vibrations of the solid far too feeble to be made sensible to us by the intervention of the air. By a modification of the instrument, in which water is made the medium of communication to the cartilages of our ears, we may render ourselves sensible of sounds in water, which, without some such contrivance, would never reach us.

I now proceed to consider the conditions on which the excellence of the stetho-

stethoscope, in its ordinary construction, depends; and, as the most important of these conditions, I shall first speak of the material of which it is formed.

Laennec says, "The densest bodies are not, as analogy would lead us to suppose, the best adapted to these instruments. Glass and metals communicate less perfectly than bodies of inferior density the sensations produced by respiration. From this observation, which appeared singular, I wished to try bodies of less density, and made in consequence a cylinder of goldbeaters'-skin. This instrument is worse than all others. Bodies of moderate density, such as paper, light woods, and canes, are those which have constantly appeared to me preferable to all others. This result is, perhaps, in contradiction to an axiom in philosophy, but it seemed to me perfectly constant."

This result, which Laennec considered as contradictory to an axiom in philosophy, is perfectly explicable from a knowledge of the laws of the propagation of sound. Vibrations once excited in a body, as the walls of the chest, will be communicated more perfectly to another body in contact with it, the stethoscope, as the material of the stethoscope more resembles that of the walls of the chest as a propagator of sound.

The stethoscope may, in fact, be considered simply as a medium to propagate the vibrations of one body to another body, and its excellence will mainly depend on the relation which its physical properties, considered as influencing the propagation of sound, bear to those of the bodies between which it is interposed. The metallic stethoscope, which Laennec found to be so bad, would be the best, if employed to propagate vibrations from one metallic body to another.

Vibrations excited by a watch in one plate of iron were communicated by a rod of iron and of wood, of the same size and figure respectively, to another plate of iron, and were heard by the ear placed in contact with the latter. The sounds were much louder, and of a different *quality*, when the communication was made by the metal, than when it was made by wood.

Again, wood propagates more perfectly than metals vibrations from one piece of wood to another.

Vibrations excited in a stethoscope of wood by the ticking of a watch in contact with it, were transmitted by a rod of iron and of wood successively to another stethoscope of wood, and were heard by the ear placed in contact with the latter. The sounds of the watch were heard with greater intensity when the rod of wood than when that of iron was interposed, and the sounds were of different *qualities*,—they were more *metallic*, if I may so speak, when propagated through the iron.

Thus, when sound is communicated from one body to another of the same nature by the intervention of a third body of a different nature, the quality of the sound will be modified by, and will partake of the quality peculiar to, this third body.

In the choice, therefore, of a material for this instrument, one should be selected that will not alter perceptibly the quality of the sounds which it is employed to transmit. This is the case with wood,—the sounds of the voice heard through the common stethoscope are not perceptibly of a different quality from those heard when the ear is immediately applied to the chest. With the metallic stethoscope this would not be the case; the sounds heard through it would be more metallic, and would approach nearer in quality the sounds of ægophony, and would consequently render those sounds less characteristic, and would detract from their value as a pathognomic sign.

Laennec observed that this was the case with persons whose voices partook of the character of ægophonic sounds.

The same phenomenon is observed in a striking degree with the water-stethoscope.

A membrane was fastened over one extremity of a hollow cylinder; the cylinder was filled with water, which caused the membrane, whose area was larger than the surface to be covered, to protrude beyond the extremity of the cylinder; the other end was then closed by a membrane in a similar manner. The membranes were impervious to water, and care was taken to prevent the admission of air. By properly adjusting the pressure at the two extremities, the water could



*A Manual of Phrenology, &c.* By ALEXANDER A. YOUNG. Philadelphia. Henry Perkins. 1837.

THIS small pamphlet, of thirty-six pages, is chiefly made up, as Mr. Young, its author, tells us in the title page, of extracts from standard writers on Phrenology. It will answer the purpose for which it was designed—to give to those curious on the subject some elementary notions preliminary to a more extended reading and ampler illustrations by lectures. We notice one or two oversights, which although not affecting the intrinsic merits of his compilation, might induce some, who are not aware of his desire to do justice in the premises, to suppose that he had not referred to the original works. Of these one is the incorrect orthography of Mr. Combe's name, by the omission of the final *e*; and the other is confounding Mr. George Combe, the celebrated author of the *Essays and Elements of Phrenology*, and of the work on the *Constitution of Man*, with his brother Doctor Andrew Combe, author of works on *Mental Derangement*, *Physiology*, and *Digestion*.

Mr. Young, in his brief Preface, tells us, that he "has concluded the work with some original remarks on the coincidence that pervades History, Scripture, and Phrenology, which he humbly conceives will not be uninteresting."

*Transactions of the New York State Medical Society. Volume III.*  
Part II. Albany. E. W. & E. Skinner. 1837.

THE contents of this volume, the first fifty-two pages of which by the way are wanting in the copy sent to us, are both varied and interesting. We have not room at present for more than this expression of our good opinion, and of our intention to notice hereafter more particularly the several articles, from four to fourteen, and an Appendix consisting of ten shorter ones. The three articles which are left out in our copy are, according to the Table of Contents prefixed, the Annual Address by Dr. Steele, Medical Topographical Report of the County of Tompkins, Report of a Committee of the Society on the Varioloid, and the means of counteracting its progress.

#### MEDICAL SCHOOLS.

OUR last Number had gone to press before we were apprised of the complete reorganization of the TRANSYLVANIA MEDICAL COLLEGE, which we now sub-join:—*Anatomy and Surgery*, Dr. Dudley, with Dr. Bush as Adjunct Professor of Anatomy; *Obstetrics and Diseases of Women and Children*, Dr. Richardson; *Materia Medica and Medical Botany*, Dr. Short; *Institutes of Medicine and Medical Jurisprudence*, Dr. Cross; *Theory and Practice of Medicine*, Dr. Eberle; *Chemistry and Pharmacy*, Dr. Thomas D. Mitchell.

UNIVERSITY OF VIRGINIA. Dr. Griffith, late of the Maryland University, has received the appointment of Professor of the Theory and Practice of Medicine, Obstetrics, and Medical Jurisprudence; and Dr. Cabell, of Richmond, Va., that of Professor of Anatomy, Physiology, and Surgery.

**UNIVERSITY OF MARYLAND.** The filling up of the vacant chair of Anatomy by the appointment of Dr. *Baxley*, was followed by the resignations of Drs. Potter, Hall, Smith, Griffith, and Mr. Ducatel, of the chairs which they respectively held. Since that event, the Trustees have appointed Dr. *Henry Howard* of Montgomery county, Md., for the chair of Midwifery and the Diseases of Women and Children; Dr. *Robert E. Dorsey* of Baltimore county, for that of Materia Medica; Dr. *M. A. Finley* of Washington county, Md., for that of the Theory and Practice of Physic; and *W. R. Fisher*, Esq. of Baltimore, for that of Chemistry. Dr. *Ellis Hughes* of Annapolis, has been appointed Demonstrator of Anatomy. There yet remains a Professor of Surgery to be elected.

**MEDICAL COLLEGE OF GEORGIA.** A commendable spirit has been displayed by the Trustees of this institution, in their adding two chairs to the six, which had been previously authorised and filled. The Medical College of Georgia, now furnishes an extended and comprehensive course of instruction, from which older institutions might take salutary hints for their government. There are eight professorships, and as many distinct branches of medical science; and the collegiate period is during six months. The following are the names of the professors, with the subjects on which they will lecture: Dr. Dugas, *on Anatomy*; Dr. Cunningham, *on the Principles and Practice of Medicine*; Dr. Joseph A. Eve, *on Therapeutics and Materia Medica*; Dr. Antony, *on Obstetrics and the Diseases of Women and Children*; Dr. Paul F. Eve, *on the Principles and Practice of Surgery*; Dr. Charles Davis, *on Chemistry and Pharmacy*; Dr. Newton, *on Physiology and Pathological Anatomy*; Dr. Ford, *on the Institutes of Medicine and Medical Jurisprudence*.

Doctor Davis had been Professor of Chemistry in the Medical College of South Carolina, and Dr. Newton had acted as Adjunct to Dr. Dugas.

**MEDICAL COLLEGE OF OHIO.** We have not yet heard that the vacancies created by the resignation of Drs. Eberle, Cross, and Albin Smith, have been filled. The two first named gentlemen are now members of the Medical Faculty of the Transylvania University; the latter has taken up his residence in the city of New York, and has received the appointment of Professor of the *Principles and Practice of Surgery*, in the College of Physicians and Surgeons.

**CINCINNATI COLLEGE.** Of the efficiency and completeness of the Faculty of this institution, our readers will have formed a favourable opinion, from the advertisement on the cover of the Ninth Number of the Library and Journal.

We shall probably give, in our next, a notice of the branches taught in some other of the medical schools of the United States, with a designation of their professors. Details of this nature are acceptable to the medical reader, who is often not fully aware of even the names, still less of the organization, of many of these institutions.

**UNIVERSITY OF PENNSYLVANIA.** Without instituting comparisons, which might seem to be invidious, we would merely content ourselves with saying, that in no past time was the Medical Department of our Alma Mater, the University of Pennsylvania, more efficiently organized with reference to all the means and appliances of instruction. In the demonstrative branches, the resources are of the most ample kind. The chemical apparatus is unrivalled, and may be called truly magnificent. The lectures on Surgery are largely illustrated both by paintings and wax preparations, representing morbid structure. The Professor of Midwifery has, also, freely availed of the pictorial art, to aid him in his descriptions of the successive stages and different kinds of labour. These are all represented by paintings of a large size, which are exhibited to the class. The botanical characters and appearance of the recent plant, are displayed by similar means by the Professor of Materia Medica. Of the riches of the Anatomical Museum,—the large models of the senses, brain, &c., and the numerous preparations dry and wet, who, amongst our readers, has not heard!

## MISCELLANEOUS.

ACCOUNT OF A MAN WHO SUBMITTED TO BE BURIED ALIVE FOR  
A MONTH, AT JAISULMER,

AND WAS DUG OUT ALIVE AT THE EXPIRATION OF THAT PERIOD.

COMMUNICATED BY H. M. TWEDELL, ESQ.

I HAVE just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about it before, the time for its accomplishment not being completed: this morning, however, the full month was over, and a man who had been buried all that time, on the bank of a tank near our camp, was dug out alive, in the presence of *Esur Lal*, one of the ministers of the Muharawal, of Jaisalmer, on whose account this singular individual was voluntarily entered a month ago. He is a youngish man, about 30 years of age, and his native village is within five kos of Kurnaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c. and allows himself to be buried for weeks or months, by any person who will pay him handsomely for the same. In the present instance the Rawul put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it certainly deserves to be known.

The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with the tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and moreover, he is sewn up in a bag of cloth, and the cell is lined with masonry, and floored with cloth, that the white ants and other insects may not easily be able to molest him. The place in which he was buried, at Jaisalmer, is a small building, about 12 feet by 8 feet, built of stone; and in the floor was a hole about three feet long, two and a half feet wide, and the same depth, or perhaps a yard deep, in which he was placed in a sitting posture, sewed up in his shroud, with his feet\* turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, five or six feet long, several inches thick, and broad enough to cover the mouth of the grave, so that he could not escape, were then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people placed outside, that no tricks might be played, nor deception practised. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave; Trevelyan's moonshee only running there in time to see the ripping open of the bag in which the man had been inclosed. He was taken out in a perfectly senseless state, his eyes closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument to pour a little water down his throat. He gradually recovered his senses, and the use of his limbs, and when we went to see him, was sitting up, supported by two men, and conversed with us in a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, and was laughed at as an impostor; but Cornet Macnaghten put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried under ground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains in a state of insensibility. His powers of abstinence must be wonderful to enable him to do without food for so long a time, nor does his hair grow during the time he remains buried.

\* Query feet, the word as used in that part of India, is *gor*, and means foot or leg.

I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above.

This letter was written by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. The gentlemen, whose names are mentioned in the letter, are Capt. Trevelyan, of the Bombay Artillery, and Cornet, now Lieut. Macnaghten, of the 5th regiment light cavalry, assistant to the agent to the Governor-General in Rajpootanah.

Some other information I obtained in the course of conversation with Lieut. Boileau, and which I noted down. Lieut. Boileau was unacquainted with the man's name or caste; he believed that he had taken up the life of a Fukeer; he understood that the man had been buried six or seven times, but whether for any period longer than a month he knew not; he did not hear how the man discovered his powers, or when he commenced to practise them. Lieut. Boileau arrived at Jaisulmer, after the interment, and saw the place, described in his letter, in which the man was buried. There was a guard of four or five Chupra-sees, in the employ of the muharawul, as he understood, who were on the watch, to prevent any interference or imposition. The process of burying, and of disinterring, was conducted in the presence of Esur Loll, one of the ministers of muharawul. The day fixed for the disinterment was known to Lieut. Boileau, but not the exact hour. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been inclosed. The moonshee immediately started off a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They waited a few seconds to apprise Lieut. Mackeson, of the 14th regiment, N. I. British Agent for the navigation of the Indus (who had declined to accompany them,) and repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was, his spirit was good, and his confidence in his powers unabated, as in answer to Lieut. Boileau's and Captain Trevelyan's inquiries, he said, "*that we might bury him again for a twelvemonth if we pleased.*" Lieut. Boileau examined, and measured with his walking stick, the grave in the floor of the chamber in which the man had been buried, and also the two slabs of stone which had been used to cover the mouth of the grave. For seven or eight days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He confesses to have great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Muharawul, in the hope of receiving his promised reward, and that tired of waiting until the purse strings of the patron were loosened, he had stolen a camel and decamped.—*India Journal of Med. and Phys. Science.*

#### PSYCHOLOGY.

M. Geoffroy St. Hilaire, the naturalist, has prepared for the Academy of Sciences a series of memoirs, to be communicated by him to that body, on the functions and situation of the soul. He states, that he has no hesitation in treating on this subject—that he feels strong in his own powers, and means, first of all, to examine the nature of the *Spiritus corporeus* of St. Augustin!—*Athenæum.*

## ON TEA OIL.

BY ROBERT D. THOMSON, M. D.

A species of fixed oil, familiarly used in China for the same economical purposes for which olive oil is employed in Europe, has been ascertained by recent travellers in China to be produced in all probability by the tea-plant, or another species of the same natural family. The author assigns reasons for believing that it either is, or may be, obtained from the seeds of various species of the two genera *Thea* and *Camellia*. It has been hitherto almost unknown in Europe. It is when fresh quite free of smell, of a pale yellow tint, without any sediment when long kept. It resists a cold of 40° F., but at 39° becomes like an emulsion. Its density is 927. It is insoluble in alcohol, sparingly soluble in ether. It burns with a remarkably clear white flame. It consists of 75 parts of elaine, and 25 of stearine; whence the author infers its elementary composition to be, oxygen 9.853, carbon 78.619, hydrogen 11.527. He is inclined to think that this oil might prove an important article of commerce in the East, because in its properties it is superior to cocoa-nut oil, and the various other oils prevalently used for burning, or as oleaginous condiments, in Asiatic countries.—*Ibid.*

## HURRICANES.

According to an Antwerp journal, which speaks of the late hurricane, the seven great hurricanes recorded in the history of Europe have all taken place in November, viz.—1st. On the 26th of November, 1282. It united the lake Fiévo to the sea, and formed the gulph now called the Zuyder Zee. 2d. On the 19th of November, 1321. It broke the dykes of Holland, and caused the destruction of seventy-two villages, and more than 100,000 persons. 3d. On the 5th of November, 1430. It occasioned a second rupture of the dykes in Holland. 4th. On the 22d of November, 1686. It a third time broke down the dykes, when twenty-five villages were destroyed, and more than 10,000 persons drowned. 5th. On the 11th of November, 1775, which also occasioned great disasters in Holland. 6th. On the 9th of November, 1800, which extended its ravages all over the continent. 7th. On the 29th of November, 1836.—*Ibid.*

## PLUMBE ON THE DISEASES OF THE SKIN.

OUR SECOND LIBRARY AND JOURNAL YEAR, which begins in November next, will open with the publication of the first part of "*A Practical Work on Diseases of the Skin*," by SAMUEL PLUMBE."

The number and complexity of the diseases of the skin, and the embarrassment which even an otherwise experienced physician often finds in treating them, cannot fail to insure for a work of full and authoritative reference, like the present one, a favourable reception. A knowledge of the subject will be facilitated in the present case by the addition of illustrative engravings, four in number, three of them coloured. The first plate is subdivided into several compartments, and exhibits the characteristic appearance of the most remarkable diseases of the skin. We have just now been shown by the artist employed for the purpose, proof impressions, from which we augur most favourably of the accuracy of the American copies for the Library edition. There is this difference, that the impressions from our plates will be more fresh and distinct than are those in the English volume.

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**By GEO. BUDD, M.B. F.R.S., Fellow of Caius College, Cambridge.**

[Read at the London College of Physicians.]

At the present time, when the discoveries of Laennec are well known, and when auscultation is generally practised, it may seem almost unnecessary to mention the following circumstances, with which I have ventured to introduce the subject of this paper.

In the several acts of breathing, speaking, coughing, the surfaces within the chest with which the air is brought into contact are by its action thrown into sonorous vibrations, which are transmitted through the substance of the lungs, and thence communicated to the parietes of the chest; and these sounds in their transmission obey the laws that regulate the transmission of sounds generally, and become modified in their intensity, nature, and quality, by changes in the density of the pulmonary tissue—by the presence of different secretions in the bronchial tubes—and by the effusion of fluid into the cavity of the pleura.

Again, the motions of the heart, and the passage of the blood through its interior, are productive of sounds which are transmitted in a similar manner to the parietes of the chest, and which are modified by changes in the volume of the cavities of the heart, or in the thickness of its walls, and by disease of the membrane which envelops it, or of the valves by which its orifices are guarded: and it is found that each of these circumstances produces a modification peculiar to itself, and which is sufficient, in most cases to characterize the condition on which it depends, and to enable us to form an opinion of the state of the contents of the chest, which is the more to be relied on, as resulting from the evidence of physical signs, which it is not in the power of the patient to alter or destroy. The perception of these sounds is, consequently, of the utmost importance to the physician. The simplest mode of obtaining it is by applying the ear immediately on the chest, but from the inconvenience of this method of proceeding, and from its impossibility in some cases, the stethoscope has been invented, which propagates to our ears the vibrations of the walls of the chest, and thus renders

us sensible of them at a distance. By the discovery, then, of the stethoscope, or rather of the mode of investigation to which it is applicable, another sense became enlisted for the investigation of diseases of the chest, and the condition of organs, which are excluded from our sight, becomes known to us through the sense of hearing.

The following observations were made with the view of ascertaining how the stethoscope performs this office, and on what conditions its excellence depends.

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Now, the vibrations communicated by the parietes of the chest to the air within the stethoscope, must, in this case, be nearly the same as if the stethoscope and chest were in actual contact; very little sound can be lost by diffusion through the interval that separates them, when this interval is very small.

We may then infer, that, in these cases, no vibrations sensible to the ear are communicated from the chest to the air within the stethoscope, but that they are communicated almost solely to the material of the instrument.

**Obs. 2.**—If, in the same circumstances, one extremity of the stethoscope be applied as usual to the chest, and the other be brought as near as possible to, without actually touching, the cartilages of the ear, no sounds can be heard; the slightest contact is sufficient to establish the necessary connexion, and to render the sounds audible.

Hence, in these cases, the vibrations of the stethoscope are not communicated in such a manner as to be sensible to the ear, to the air within the stethoscope. The sounds are therefore communicated from the chest to the material of the instrument, and are thence propagated through the cartilages and solid parts of the ear to the auditory nerve, and may be heard distinctly through the stethoscope, by a person, who, from thickening of the tympanum, is deaf to sounds of far greater intensity propagated by air.

This property of the solid parts of the ear of transmitting to the auditory nerve the vibrations of solida, may, perhaps, aid us in discovering, in cases of deafness, if the nerve be affected, or if the obstacle be in the tympanum; in the former case, the ear would be insensible of the sonorous vibrations of a solid in contact with its cartilages; and, in the latter, it would perceive them distinctly, though equally insensible of ordinary sounds. The stethoscope is, then, an instrument that establishes a solid connexion between the walls of the chest and the auditory nerve, and that serves to transmit to the latter the vibrations of the former.

The organ of hearing consists essentially in the nerve of hearing, and in an apparatus by which external vibrations are conveyed to it; and we find that in nature this apparatus is modified, so as always to be best adapted to the medium in which the animal lives. In ears which are formed for the perception of sounds in air, the air within the tympanum forms the medium of communication between the external air, which propagates the vibrations, and the nerve of hearing which is destined to receive them, this communication being only interrupted by the presence of thin membranes, which obey the slightest impulse of the air. In fishes, whose ears are intended for the perception of sounds in water, air is no longer the medium of communication, and there is no external appearance of the organ; the nerve is lodged in the cartilages of the head; the vibrations of the water are communicated to these cartilages, which are nearly of the same density as the water, and are by them transmitted to the nerve. And by the stethoscope, which is intended to render us sensible of the vibrations of a solid, we establish a solid connexion between the sounding body and our nerve of hearing, by which we are enabled to perceive vibrations of the solid far too feeble to be made sensible to us by the intervention of the air. By a modification of the instrument, in which water is made the medium of communication to the cartilages of our ears, we may render ourselves sensible of sounds in water, which, without some such contrivance, would never reach us.

I now proceed to consider the conditions on which the excellence of the ste-

stethoscope, in its ordinary construction, depends; and, as the most important of these conditions, I shall first speak of the material of which it is formed.

Laennec says, "The densest bodies are not, as analogy would lead us to suppose, the best adapted to these instruments. Glass and metals communicate less perfectly than bodies of inferior density the sensations produced by respiration. From this observation, which appeared singular, I wished to try bodies of less density, and made in consequence a cylinder of goldbeaters'-skin. This instrument is worse than all others. Bodies of moderate density, such as paper, light woods, and canes, are those which have constantly appeared to me preferable to all others. This result is, perhaps, in contradiction to an axiom in philosophy, but it seemed to me perfectly constant."

This result, which Laennec considered as contradictory to an axiom in philosophy, is perfectly explicable from a knowledge of the laws of the propagation of sound. Vibrations once excited in a body, as the walls of the chest, will be communicated more perfectly to another body in contact with it, the stethoscope, as the material of the stethoscope more resembles that of the walls of the chest as a propagator of sound.

The stethoscope may, in fact, be considered simply as a medium to propagate the vibrations of one body to another body, and its excellence will mainly depend on the relation which its physical properties, considered as influencing the propagation of sound, bear to those of the bodies between which it is interposed. The metallic stethoscope, which Laennec found to be so bad, would be the best, if employed to propagate vibrations from one metallic body to another.

Vibrations excited by a watch in one plate of iron were communicated by a rod of iron and of wood, of the same size and figure respectively, to another plate of iron, and were heard by the ear placed in contact with the latter. The sounds were much louder, and of a different *quality*, when the communication was made by the metal, than when it was made by wood.

Again, wood propagates more perfectly than metals vibrations from one piece of wood to another.

Vibrations excited in a stethoscope of wood by the ticking of a watch in contact with it, were transmitted by a rod of iron and of wood successively to another stethoscope of wood, and were heard by the ear placed in contact with the latter. The sounds of the watch were heard with greater intensity when the rod of wood than when that of iron was interposed, and the sounds were of different *qualities*,—they were more *metallic*, if I may so speak, when propagated through the iron.

Thus, when sound is communicated from one body to another of the same nature by the intervention of a third body of a different nature, the quality of the sound will be modified by, and will partake of the quality peculiar to, this third body.

In the choice, therefore, of a material for this instrument, one should be selected that will not alter perceptibly the quality of the sounds which it is employed to transmit. This is the case with wood,—the sounds of the voice heard through the common stethoscope are not perceptibly of a different quality from those heard when the ear is immediately applied to the chest. With the metallic stethoscope this would not be the case; the sounds heard through it would be more metallic, and would approach nearer in quality the sounds of ægophony, and would consequently render those sounds less characteristic, and would detract from their value as a pathognomic sign.

Laennec observed that this was the case with persons whose voices partook of the character of ægophonic sounds.

The same phenomenon is observed in a striking degree with the water-stethoscope.

A membrane was fastened over one extremity of a hollow cylinder; the cylinder was filled with water, which caused the membrane, whose area was larger than the surface to be covered, to protrude beyond the extremity of the cylinder; the other end was then closed by a membrane in a similar manner. The membranes were impervious to water, and care was taken to prevent the admission of air. By properly adjusting the pressure at the two extremities, the water could



be made to protrude slightly beyond both, and thus a water-stethoscope is formed. The respiratory murmur was heard through this instrument, though with less intensity than through the common stethoscope, but when it was applied to the trachea of a person speaking, a modification of the quality of the sounds was produced,—they resembled somewhat those of ægophony.

I have observed similar changes in the quality of sounds transmitted through water, under other circumstances, and have been led to doubt the correctness of the usual explanation of the phenomenon of ægophony, by which it is made to depend on a succession of echoes, and to consider it simply as the modification of the quality of the sounds by passing through a liquid.

Now, through a well-formed stethoscope of wood, the sounds of auscultation are not only not perceptibly altered in quality, but are heard with almost the same intensity as when the ear is immediately applied to the chest: whence it follows, that the sound, in its communication from the chest to the stethoscope, suffers but little reflexion. It follows also from this, that the indications of the instrument are true, as far as the wood is concerned, or that it can give no note of its own—a circumstance that might happen, in strong vibrations, if the material of the instrument differed much in its properties as a propagator of sound, from those of the bodies between which it was interposed.

There is, however, an apparent exception to this. Laennec says, that in auscultation of the voice the instrument should be used with the plug or obturator; that if this precaution be neglected, we may sometimes be deceived by an unusual resonance of the voice, which depends solely on the instrument, or that the instrument has, in this case, a note of its own. This must depend on the column of air within the stethoscope, which, as we have already seen, is not thrown into insensible vibrations in the feebler sounds of auscultation, but which, in louder ones, as in those of the voice, may sometimes be excited by particular notes with which it can vibrate in unison; and the introduction of the plug prevents this unusual resonance by diminishing the volume of the column of air on which it depends.

Another case in which Laennec recommends the use of the plug, is in auscultation of the heart. As the sounds heard in this case are always too feeble to produce the note of the instrument, the use of the plug can only be to oppose to the chest a body of greater solidity, which will consequently propagate more perfectly the *impulse* of the heart against the side of the chest.

The material of which the stethoscope is formed should also be uniform in its texture.

Pieces of cotton wadding were gummed on the ends of a common trumpet-shaped stethoscope of wood, and parts corresponding to the hollow of the instrument were punched out. When this was applied lightly to the chest and ear, the respiratory murmur was heard very faintly; as the pressure was increased the sounds became more audible. When pieces of cork were substituted for the wadding the sounds were much more audible.

Hence, a diminution of sound results from the addition at each end of the stethoscope of substances different from wood, and this diminution is less as the foreign substances resemble wood more nearly as propagators of sound.

This is in accordance with a principle in acoustics, that when sounds are propagated through any medium, they will generally undergo a reflexion at any change of medium, and that the reflexion will be more complete, and consequently the transmitted sound more feeble, as the media differ more in the physical properties that influence the propagation of sound. For example, when a sound propagated in air meets a plane surface of water, it is strongly reflected, and produces an echo, while the transmitted sound, or that heard by a person immersed in the water, is extremely feeble.

The inference from this is, that the stethoscope should be of one piece. There is, however, a practical objection to this with respect to the ear-piece of the trumpet-shaped stethoscope; the wood which appears by trial to be best adapted to these instruments is brittle, and it seems advisable to form the ear-piece of ebony, by which the instrument will be more durable, and from the resemblance which ebony bears to the material of which the stethoscope is usually made,

the obstruction to the sound from this cause will be almost, if not quite, insensible. The ebony or ivory ring which is frequently placed on the other end of the stethoscope, is of no practical advantage, and should be dispensed with.

To ascertain the effect of the hollow of the stethoscope, I caused two to be made of the same size and figure, and of the same piece of wood; one solid, the other hollowed as usual. The sounds were heard through both, but more distinctly through the hollow one. This observation was made by Laennec when performing the experiments that led to the construction of the instrument. The sounds are, then, strengthened by the hollow, perhaps from its permitting the vibrations of the wood to take place more freely.

Influenced by this idea, I caused one to be made as thin as possible, and compared it with one of the same material, similar in its construction, and of ordinary thickness; the form and dimensions of the hollow being the same in both.

The difference was slight, but appreciable, and in favour of the thin one. If this observation should be confirmed, it will be advisable to reduce the thickness of the instrument as much as possible, without too far impairing its strength; and, in the trumpet-shaped stethoscope, this may be done to a considerable extent, owing to the smallness of the cylinder that forms the stem, on account of which it is enabled, with a given thickness, to resist greater pressure tending to crush it.

From the accuracy with which sonorous vibrations, once excited in wood, are propagated through its substance, the length of the instrument cannot have much influence on its properties.

When the edge of a sixpence was drawn against one end of a deal bulk whose length was fifteen feet, it was heard distinctly through a pole several feet in length used as a stethoscope, one end of the pole being applied to the end of the fir opposite to that on which the sixpence was drawn.

In the original construction of the stethoscope, the form and material were such as to propagate the sounds with little diminution of intensity, but no attempt was made to heighten them. This, however, has since been done by terminating the trumpet-shaped stethoscope of wood by a small tube instead of the common flat ear-piece. The sounds are, in this case, concentrated towards the tube which is placed in contact with the cartilages forming the external meatus. Some exaggeration of the sounds is, undoubtedly, obtained by this; but the difficulty, when employing it, of keeping the tube in steady contact with the cartilages of the meatus, is sufficient to prevent its adoption.

The same contrivance has been more happily applied in the gum-elastic stethoscope or ear-trumpet, in which the flexibility of the instrument allows us to keep the terminal tube in contact with the cartilages of the meatus, and, at the same time, to apply the cup to different parts of the chest.

In this instrument, when used as a stethoscope, as well as in the other, the material of which it is formed conveys the sound; for if, while the cup is in contact with the chest, the tube is withdrawn in the slightest degree from contact with the cartilages of the ear, the sounds of respiration become inaudible.

The magnifying power of the ear-piece, in this case, is readily perceived by employing, alternately, the gum-elastic stethoscope with the terminal tube, and the common flat ear-piece. The sounds will be much more feeble when the latter is used.

The foregoing observations may tend to render our ideas more definite respecting an instrument we are in the daily habit of using, and may, perhaps, serve to prevent attempts at its improvement, founded on erroneous notions of its mode of action.

Some, under the idea that the sounds were propagated principally by the air, have calculated the form of the hollow so that the undulations of the air within it should be propagated most perfectly to the tympanum.

Others, apparently influenced by the same idea, have recommended that the ear-piece should be hollowed so as to prevent pressure on the anterior cartilage of the ear (the tragus), by which the external meatus would be stopped.

Others again, and among them M. Piorrey, imagining that the sounds must be louder as the body is more dense, have again tried the metallic stethoscope,

*A Manual of Phrenology, &c.* By ALEXANDER A. YOUNG. Philadelphia. Henry Perkins. 1837.

THIS small pamphlet, of thirty-six pages, is chiefly made up, as Mr. Young, its author, tells us in the title page, of extracts from standard writers on Phrenology. It will answer the purpose for which it was designed—to give to those curious on the subject some elementary notions preliminary to a more extended reading and ampler illustrations by lectures. We notice one or two oversights, which although not affecting the intrinsic merits of his compilation, might induce some, who are not aware of his desire to do justice in the premises, to suppose that he had not referred to the original works. Of these one is the incorrect orthography of Mr. Combe's name, by the omission of the final *e*; and the other is confounding Mr. George Combe, the celebrated author of the *Essays and Elements of Phrenology*, and of the work on the *Constitution of Man*, with his brother *Doctor Andrew Combe*, author of works on *Mental Derangement*, *Physiology*, and *Digestion*.

Mr. Young, in his brief Preface, tells us, that he "has concluded the work with some original remarks on the coincidence that pervades History, Scripture, and Phrenology, which he humbly conceives will not be uninteresting."

*Transactions of the New York State Medical Society.* Volume III. Part II. Albany. E. W. & E. Skinner. 1837.

THE contents of this volume, the first fifty-two pages of which by the way are wanting in the copy sent to us, are both varied and interesting. We have not room at present for more than this expression of our good opinion, and of our intention to notice hereafter more particularly the several articles, from four to fourteen, and an Appendix consisting of ten shorter ones. The three articles which are left out in our copy are, according to the Table of Contents prefixed, the Annual Address by Dr. Steele, Medical Topographical Report of the County of Tompkins, Report of a Committee of the Society on the Varioloid, and the means of counteracting its progress.

#### MEDICAL SCHOOLS.

OUR last Number had gone to press before we were apprised of the complete reorganization of the TRANSYLVANIA MEDICAL COLLEGE, which we now subjoin:—*Anatomy and Surgery*, Dr. Dudley, with Dr. Bush as Adjunct Professor of Anatomy; *Obstetrics and Diseases of Women and Children*, Dr. Richardson; *Materia Medica and Medical Botany*, Dr. Short; *Institutes of Medicine and Medical Jurisprudence*, Dr. Cross; *Theory and Practice of Medicine*, Dr. Eberle; *Chemistry and Pharmacy*, Dr. Thomas D. Mitchell.

UNIVERSITY OF VIRGINIA. Dr. Griffith, late of the Maryland University, has received the appointment of Professor of the Theory and Practice of Medicine, Obstetrics, and Medical Jurisprudence; and Dr. Cabell, of Richmond, Va., that of Professor of Anatomy, Physiology, and Surgery.

**UNIVERSITY OF MARYLAND.** The filling up of the vacant chair of Anatomy by the appointment of Dr. *Baxley*, was followed by the resignations of Drs. Potter, Hall, Smith, Griffith, and Mr. Ducatel, of the chairs which they respectively held. Since that event, the Trustees have appointed Dr. *Henry Howard* of Montgomery county, Md., for the chair of Midwifery and the Diseases of Women and Children; Dr. *Robert E. Dorsey* of Baltimore county, for that of Materia Medica; Dr. *M. A. Finley* of Washington county, Md., for that of the Theory and Practice of Physic; and *W. R. Fisher*, Esq. of Baltimore, for that of Chemistry. Dr. *Ellis Hughes* of Annapolis, has been appointed Demonstrator of Anatomy. There yet remains a Professor of Surgery to be elected.

**MEDICAL COLLEGE OF GEORGIA.** A commendable spirit has been displayed by the Trustees of this institution, in their adding two chairs to the six, which had been previously authorised and filled. The Medical College of Georgia, now furnishes an extended and comprehensive course of instruction, from which older institutions might take salutary hints for their government. There are eight professorships, and as many distinct branches of medical science; and the collegiate period is during six months. The following are the names of the professors, with the subjects on which they will lecture: Dr. *Dugas*, on *Anatomy*; Dr. *Cunningham*, on the *Principles and Practice of Medicine*; Dr. *Joseph A. Eve*, on *Therapeutics and Materia Medica*; Dr. *Antony*, on *Obstetrics and the Diseases of Women and Children*; Dr. *Paul F. Eve*, on the *Principles and Practice of Surgery*; Dr. *Charles Davis*, on *Chemistry and Pharmacy*; Dr. *Newton*, on *Physiology and Pathological Anatomy*; Dr. *Ford*, on the *Institutes of Medicine and Medical Jurisprudence*.

Doctor Davis had been Professor of Chemistry in the Medical College of South Carolina, and Dr. Newton had acted as Adjunct to Dr. Dugas.

**MEDICAL COLLEGE OF OHIO.** We have not yet heard that the vacancies created by the resignation of Drs. Eberle, Cross, and Albin Smith, have been filled. The two first named gentlemen are now members of the Medical Faculty of the Transylvania University; the latter has taken up his residence in the city of New York, and has received the appointment of Professor of the *Principles and Practice of Surgery*, in the College of Physicians and Surgeons.

**CINCINNATI COLLEGE.** Of the efficiency and completeness of the Faculty of this institution, our readers will have formed a favourable opinion, from the advertisement on the cover of the Ninth Number of the Library and Journal.

We shall probably give, in our next, a notice of the branches taught in some other of the medical schools of the United States, with a designation of their professors. Details of this nature are acceptable to the medical reader, who is often not fully aware of even the names, still less of the organization, of many of these institutions.

**UNIVERSITY OF PENNSYLVANIA.** Without instituting comparisons, which might seem to be invidious, we would merely content ourselves with saying, that in no past time was the Medical Department of our Alma Mater, the University of Pennsylvania, more efficiently organized with reference to all the means and appliances of instruction. In the demonstrative branches, the resources are of the most ample kind. The chemical apparatus is unrivalled, and may be called truly magnificent. The lectures on Surgery are largely illustrated both by paintings and wax preparations, representing morbid structure. The Professor of Midwifery has, also, freely availed of the pictorial art, to aid him in his descriptions of the successive stages and different kinds of labour. These are all represented by paintings of a large size, which are exhibited to the class. The botanical characters and appearance of the recent plant, are displayed by similar means by the Professor of Materia Medica. Of the riches of the Anatomical Museum,—the large models of the senses, brain, &c., and the numerous preparations dry and wet, who, amongst our readers, has not heard!

## MISCELLANEOUS.

ACCOUNT OF A MAN WHO SUBMITTED TO BE BURIED ALIVE FOR  
A MONTH, AT JAISULMER,

AND WAS DUG OUT ALIVE AT THE EXPIRATION OF THAT PERIOD.

COMMUNICATED BY H. M. TWEDELL, ESQ.

I HAVE just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about it before, the time for its accomplishment not being completed: this morning, however, the full month was over, and a man who had been buried all that time, on the bank of a tank near our camp, was dug out alive, in the presence of *Esur Lal*, one of the ministers of the Muharâwul, of Jaisalmer, on whose account this singular individual was voluntarily entered a month ago. He is a youngish man, about 30 years of age, and his native village is within five kos of Kurnaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c. and allows himself to be buried for weeks or months, by any person who will pay him handsomely for the same. In the present instance the Râwul put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it certainly deserves to be known.

The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with the tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and moreover, he is sewn up in a bag of cloth, and the cell is lined with masonry, and floored with cloth, that the white ants and other insects may not easily be able to molest him. The place in which he was buried, at Jaisalmer, is a small building, about 12 feet by 8 feet, built of stone; and in the floor was a hole about three feet long, two and a half feet wide, and the same depth, or perhaps a yard deep, in which he was placed in a sitting posture, sewed up in his shroud, with his feet\* turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, five or six feet long, several inches thick, and broad enough to cover the mouth of the grave, so that he could not escape, were then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people placed outside, that no tricks might be played, nor deception practised. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave; Trevelyan's moonshee only running there in time to see the ripping open of the bag in which the man had been inclosed. He was taken out in a perfectly senseless state, his eyes closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument to pour a little water down his throat. He gradually recovered his senses, and the use of his limbs, and when we went to see him, was sitting up, supported by two men, and conversed with us in a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, and was laughed at as an impostor; but Cornet Macnaghten put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried under ground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains in a state of insensibility. His powers of abstinence must be wonderful to enable him to do without food for so long a time, nor does his hair grow during the time he remains buried.

\* Query feet, the word as used in that part of India, is *ger*, and means foot or leg.

I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above.

This letter was written by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. The gentlemen, whose names are mentioned in the letter, are Capt. Trevelyan, of the Bombay Artillery, and Cornet, now Lieut. Macnaghten, of the 5th regiment light cavalry, assistant to the agent to the Governor-General in Rajpootanah.

Some other information I obtained in the course of conversation with Lieut. Boileau, and which I noted down. Lieut. Boileau was unacquainted with the man's name or caste; he believed that he had taken up the life of a Fukeer; he understood that the man had been buried six or seven times, but whether for any period longer than a month he knew not; he did not hear how the man discovered his powers, or when he commenced to practise them. Lieut. Boileau arrived at Jaisulmer, after the interment, and saw the place, described in his letter, in which the man was buried. There was a guard of four or five Chupra-sees, in the employ of the muharáwul, as he understood, who were on the watch, to prevent any interference or imposition. The process of burying, and of disinterring, was conducted in the presence of Esur Loll, one of the ministers of muharáwul. The day fixed for the disinterment was known to Lieut. Boileau, but not the exact hour. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been inclosed. The moonshee immediately started off a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They waited a few seconds to apprise Lieut. Mackeson, of the 14th regiment, N. I. British Agent for the navigation of the Indus (who had declined to accompany them,) and repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was, his spirit was good, and his confidence in his powers unabated, as in answer to Lieut. Boileau's and Captain Trevelyan's inquiries, he said, "*that we might bury him again for a twelvemonth if we pleased.*" Lieut. Boileau examined, and measured with his walking stick, the grave in the floor of the chamber in which the man had been buried, and also the two slabs of stone which had been used to cover the mouth of the grave. For seven or eight days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He confesses to have great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Muharáwul, in the hope of receiving his promised reward, and that tired of waiting until the purse strings of the patron were loosened, he had stolen a camel and decamped.—*India Journal of Med. and Phys. Science.*

#### PSYCHOLOGY.

M. Geoffroy St. Hilaire, the naturalist, has prepared for the Academy of Sciences a series of memoirs, to be communicated by him to that body, on the functions and situation of the soul. He states, that he has no hesitation in treating on this subject—that he feels strong in his own powers, and means, first of all, to examine the nature of the *Spiritus corporeus* of St. Augustin!!—*Athenæum.*

## ON TEA OIL.

BY ROBERT D. THOMSON, M. D.

A species of fixed oil, familiarly used in China for the same economical purposes for which olive oil is employed in Europe, has been ascertained by recent travellers in China to be produced in all probability by the tea-plant, or another species of the same natural family. The author assigns reasons for believing that it either is, or may be, obtained from the seeds of various species of the two genera *Thea* and *Camellia*. It has been hitherto almost unknown in Europe. It is when fresh quite free of smell, of a pale yellow tint, without any sediment when long kept. It resists a cold of 40° F., but at 39° becomes like an emulsion. Its density is 927. It is insoluble in alcohol, sparingly soluble in ether. It burns with a remarkably clear white flame. It consists of 75 parts of elaine, and 25 of stearine; whence the author infers its elementary composition to be, oxygen 9.853, carbon 78.619, hydrogen 11.527. He is inclined to think that this oil might prove an important article of commerce in the East, because in its properties it is superior to cocoa-nut oil, and the various other oils prevalently used for burning, or as oleaginous condiments, in Asiatic countries.—*Ibid.*

## HURRICANES.

According to an Antwerp journal, which speaks of the late hurricane, the seven great hurricanes recorded in the history of Europe have all taken place in November, viz.—1st. On the 26th of November, 1282. It united the lake Fiévo to the sea, and formed the gulph now called the Zuyder Zee. 2d. On the 19th of November, 1321. It broke the dykes of Holland, and caused the destruction of seventy-two villages, and more than 100,000 persons. 3d. On the 5th of November, 1430. It occasioned a second rupture of the dykes in Holland. 4th. On the 22d of November, 1686. It a third time broke down the dykes, when twenty-five villages were destroyed, and more than 10,000 persons drowned. 5th. On the 11th of November, 1775, which also occasioned great disasters in Holland. 6th. On the 9th of November, 1800, which extended its ravages all over the continent. 7th. On the 29th of November, 1836.—*Ibid.*

## PLUMBE ON THE DISEASES OF THE SKIN.

OUR SECOND LIBRARY AND JOURNAL YEAR, which begins in November next, will open with the publication of the first part of "*A Practical Work on Diseases of the Skin*, by SAMUEL PLUMBE."

The number and complexity of the diseases of the skin, and the embarrassment which even an otherwise experienced physician often finds in treating them, cannot fail to insure for a work of full and authoritative reference, like the present one, a favourable reception. A knowledge of the subject will be facilitated in the present case by the addition of illustrative engravings, four in number, three of them coloured. The first plate is subdivided into several compartments, and exhibits the characteristic appearance of the most remarkable diseases of the skin. We have just now been shown by the artist employed for the purpose, proof impressions, from which we augur most favourably of the accuracy of the American copies for the Library edition. There is this difference, that the impressions from our plates will be more fresh and distinct than are those in the English volume.

# THE ECLECTIC JOURNAL OF MEDICINE.

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**EDITED BY JOHN BELL, M.D.**

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## **OBSERVATIONS ON THE STETHOSCOPE.**

**By Geo. Budd, M.B. F.R.S., Fellow of Caius College, Cambridge.**

[Read at the London College of Physicians.]

AT the present time, when the discoveries of Laennec are well known, and when auscultation is generally practised, it may seem almost unnecessary to mention the following circumstances, with which I have ventured to introduce the subject of this paper.

In the several acts of breathing, speaking, coughing, the surfaces within the chest with which the air is brought into contact are by its action thrown into sonorous vibrations, which are transmitted through the substance of the lungs, and thence communicated to the parietes of the chest; and these sounds in their transmission obey the laws that regulate the transmission of sounds generally, and become modified in their intensity, nature, and quality, by changes in the density of the pulmonary tissue—by the presence of different secretions in the bronchial tubes—and by the effusion of fluid into the cavity of the pleura.

Again, the motions of the heart, and the passage of the blood through its interior, are productive of sounds which are transmitted in a similar manner to the parietes of the chest, and which are modified by changes in the volume of the cavities of the heart, or in the thickness of its walls, and by disease of the membrane which envelops it, or of the valves by which its orifices are guarded: and it is found that each of these circumstances produces a modification peculiar to itself, and which is sufficient, in most cases to characterize the condition on which it depends, and to enable us to form an opinion of the state of the contents of the chest, which is the more to be relied on, as resulting from the evidence of physical signs, which it is not in the power of the patient to alter or destroy. The perception of these sounds is, consequently, of the utmost importance to the physician. The simplest mode of obtaining it is by applying the ear immediately on the chest, but from the inconvenience of this method of proceeding, and from its impossibility in some cases, the stethoscope has been invented, which propagates to our ears the vibrations of the walls of the chest, and thus renders



us sensible of them at a distance. By the discovery, then, of the stethoscope, or rather of the mode of investigation to which it is applicable, another sense became enlisted for the investigation of diseases of the chest, and the condition of organs, which are excluded from our sight, becomes known to us through the sense of hearing.

The following observations were made with the view of ascertaining how the stethoscope performs this office, and on what conditions its excellence depends.

**Oss. 1.**—If one extremity of the stethoscope be applied to the ear as usual, and the other be brought as near as possible to, without actually touching, the chest of a person, in whom the murmurs of respiration are unusually audible, no sound can be heard.

Now, the vibrations communicated by the parietes of the chest to the air within the stethoscope, must, in this case, be nearly the same as if the stethoscope and chest were in actual contact; very little sound can be lost by diffusion through the interval that separates them, when this interval is very small.

We may then infer, that, in these cases, no vibrations sensible to the ear are communicated from the chest to the air within the stethoscope, but that they are communicated almost solely to the material of the instrument.

**Oss. 2.**—If, in the same circumstances, one extremity of the stethoscope be applied as usual to the chest, and the other be brought as near as possible to, without actually touching, the cartilages of the ear, no sounds can be heard; the slightest contact is sufficient to establish the necessary connexion, and to render the sounds audible.

Hence, in these cases, the vibrations of the stethoscope are not communicated in such a manner as to be sensible to the ear, to the air within the stethoscope. The sounds are therefore communicated from the chest to the material of the instrument, and are thence propagated through the cartilages and solid parts of the ear to the auditory nerve, and may be heard distinctly through the stethoscope, by a person, who, from thickening of the tympanum, is deaf to sounds of far greater intensity propagated by air.

This property of the solid parts of the ear of transmitting to the auditory nerve the vibrations of solida, may, perhaps, aid us in discovering, in cases of deafness, if the nerve be affected, or if the obstacle be in the tympanum; in the former case, the ear would be insensible of the sonorous vibrations of a solid in contact with its cartilages; and, in the latter, it would perceive them distinctly, though equally insensible of ordinary sounds. The stethoscope is, then, an instrument that establishes a solid connexion between the walls of the chest and the auditory nerve, and that serves to transmit to the latter the vibrations of the former.

The organ of hearing consists essentially in the nerve of hearing, and in an apparatus by which external vibrations are conveyed to it; and we find that in nature this apparatus is modified, so as always to be best adapted to the medium in which the animal lives. In ears which are formed for the perception of sounds in air, the air within the tympanum forms the medium of communication between the external air, which propagates the vibrations, and the nerve of hearing which is destined to receive them, this communication being only interrupted by the presence of thin membranes, which obey the slightest impulse of the air. In fishes, whose ears are intended for the perception of sounds in water, air is no longer the medium of communication, and there is no external appearance of the organ; the nerve is lodged in the cartilages of the head; the vibrations of the water are communicated to these cartilages, which are nearly of the same density as the water, and are by them transmitted to the nerve. And by the stethoscope, which is intended to render us sensible of the vibrations of a solid, we establish a solid connexion between the sounding body and our nerve of hearing, by which we are enabled to perceive vibrations of the solid far too feeble to be made sensible to us by the intervention of the air. By a modification of the instrument, in which water is made the medium of communication to the cartilages of our ears, we may render ourselves sensible of sounds in water, which, without some such contrivance, would never reach us.

I now proceed to consider the conditions on which the excellence of the ste-

stethoscope, in its ordinary construction, depends; and, as the most important of these conditions, I shall first speak of the material of which it is formed.

Laennec says, "The densest bodies are not, as analogy would lead us to suppose, the best adapted to these instruments. Glass and metals communicate less perfectly than bodies of inferior density the sensations produced by respiration. From this observation, which appeared singular, I wished to try bodies of less density, and made in consequence a cylinder of goldbeaters'-skin. This instrument is worse than all others. Bodies of moderate density, such as paper, light woods, and canes, are those which have constantly appeared to me preferable to all others. This result is, perhaps, in contradiction to an axiom in philosophy, but it seemed to me perfectly constant."

This result, which Laennec considered as contradictory to an axiom in philosophy, is perfectly explicable from a knowledge of the laws of the propagation of sound. Vibrations once excited in a body, as the walls of the chest, will be communicated more perfectly to another body in contact with it, the stethoscope, as the material of the stethoscope more resembles that of the walls of the chest as a propagator of sound.

The stethoscope may, in fact, be considered simply as a medium to propagate the vibrations of one body to another body, and its excellence will mainly depend on the relation which its physical properties, considered as influencing the propagation of sound, bear to those of the bodies between which it is interposed. The metallic stethoscope, which Laennec found to be so bad, would be the best, if employed to propagate vibrations from one metallic body to another.

Vibrations excited by a watch in one plate of iron were communicated by a rod of iron and of wood, of the same size and figure respectively, to another plate of iron, and were heard by the ear placed in contact with the latter. The sounds were much louder, and of a different *quality*, when the communication was made by the metal, than when it was made by wood.

Again, wood propagates more perfectly than metals vibrations from one piece of wood to another.

Vibrations excited in a stethoscope of wood by the ticking of a watch in contact with it, were transmitted by a rod of iron and of wood successively to another stethoscope of wood, and were heard by the ear placed in contact with the latter. The sounds of the watch were heard with greater intensity when the rod of wood than when that of iron was interposed, and the sounds were of different *qualities*,—they were more *metallic*, if I may so speak, when propagated through the iron.

Thus, when sound is communicated from one body to another of the same nature by the intervention of a third body of a different nature, the quality of the sound will be modified by, and will partake of the quality peculiar to, this third body.

In the choice, therefore, of a material for this instrument, one should be selected that will not alter perceptibly the quality of the sounds which it is employed to transmit. This is the case with wood,—the sounds of the voice heard through the common stethoscope are not perceptibly of a different quality from those heard when the ear is immediately applied to the chest. With the metallic stethoscope this would not be the case; the sounds heard through it would be more metallic, and would approach nearer in quality the sounds of ægophony, and would consequently render those sounds less characteristic, and would detract from their value as a pathognomic sign.

Laennec observed that this was the case with persons whose voices partook of the character of ægophonic sounds.

The same phenomenon is observed in a striking degree with the water-stethoscope.

A membrane was fastened over one extremity of a hollow cylinder; the cylinder was filled with water, which caused the membrane, whose area was larger than the surface to be covered, to protrude beyond the extremity of the cylinder; the other end was then closed by a membrane in a similar manner. The membranes were impervious to water, and care was taken to prevent the admission of air. By properly adjusting the pressure at the two extremities, the water could

*A Manual of Phrenology, &c.* By ALEXANDER A. YOUNG. Philadelphia. Henry Perkins. 1837.

THIS small pamphlet, of thirty-six pages, is chiefly made up, as Mr. Young, its author, tells us in the title page, of extracts from standard writers on Phrenology. It will answer the purpose for which it was designed—to give to those curious on the subject some elementary notions preliminary to a more extended reading and ampler illustrations by lectures. We notice one or two oversights, which although not affecting the intrinsic merits of his compilation, might induce some, who are not aware of his desire to do justice in the premises, to suppose that he had not referred to the original works. Of these one is the incorrect orthography of Mr. Combe's name, by the omission of the final *e*; and the other is confounding Mr. George Combe, the celebrated author of the *Essays and Elements of Phrenology*, and of the work on the *Constitution of Man*, with his brother Doctor Andrew Combe, author of works on *Mental Derangement, Physiology, and Digestion*.

Mr. Young, in his brief Preface, tells us, that he "has concluded the work with some original remarks on the coincidence that pervades History, Scripture, and Phrenology, which he humbly conceives will not be uninteresting."

*Transactions of the New York State Medical Society.* Volume III. Part II. Albany. E. W. & E. Skinner. 1837.

THE contents of this volume, the first fifty-two pages of which by the way are wanting in the copy sent to us, are both varied and interesting. We have not room at present for more than this expression of our good opinion, and of our intention to notice hereafter more particularly the several articles, from four to fourteen, and an Appendix consisting of ten shorter ones. The three articles which are left out in our copy are, according to the Table of Contents prefixed, the Annual Address by Dr. Steele, Medical Topographical Report of the County of Tompkins, Report of a Committee of the Society on the Varioloid, and the means of counteracting its progress.

#### MEDICAL SCHOOLS.

OUR last Number had gone to press before we were apprised of the complete reorganization of the TRANSYLVANIA MEDICAL COLLEGE, which we now subjoin:—*Anatomy and Surgery*, Dr. Dudley, with Dr. Bush as Adjunct Professor of Anatomy; *Obstetrics and Diseases of Women and Children*, Dr. Richardson; *Materia Medica and Medical Botany*, Dr. Short; *Institutes of Medicine and Medical Jurisprudence*, Dr. Cross; *Theory and Practice of Medicine*, Dr. Eberle; *Chemistry and Pharmacy*, Dr. Thomas D. Mitchell.

UNIVERSITY OF VIRGINIA. Dr. Griffith, late of the Maryland University, has received the appointment of Professor of the Theory and Practice of Medicine, Obstetrics, and Medical Jurisprudence; and Dr. Cabell, of Richmond, Va., that of Professor of Anatomy, Physiology, and Surgery.

**UNIVERSITY OF MARYLAND.** The filling up of the vacant chair of Anatomy by the appointment of Dr. *Baxley*, was followed by the resignations of Drs. Potter, Hall, Smith, Griffith, and Mr. Ducatel, of the chairs which they respectively held. Since that event, the Trustees have appointed Dr. *Henry Howard* of Montgomery county, Md., for the chair of Midwifery and the Diseases of Women and Children; Dr. *Robert E. Dorsey* of Baltimore county, for that of Materia Medica; Dr. *M. A. Finley* of Washington county, Md., for that of the Theory and Practice of Physic; and *W. R. Fisher*, Esq. of Baltimore, for that of Chemistry. Dr. *Ellis Hughes* of Annapolis, has been appointed Demonstrator of Anatomy. There yet remains a Professor of Surgery to be elected.

**MEDICAL COLLEGE OF GEORGIA.** A commendable spirit has been displayed by the Trustees of this institution, in their adding two chairs to the six, which had been previously authorised and filled. The Medical College of Georgia, now furnishes an extended and comprehensive course of instruction, from which older institutions might take salutary hints for their government. There are eight professorships, and as many distinct branches of medical science; and the collegiate period is during six months. The following are the names of the professors, with the subjects on which they will lecture: Dr. Dugas, *on Anatomy*; Dr. Cunningham, *on the Principles and Practice of Medicine*; Dr. Joseph A. Eve, *on Therapeutics and Materia Medica*; Dr. Antony, *on Obstetrics and the Diseases of Women and Children*; Dr. Paul F. Eve, *on the Principles and Practice of Surgery*; Dr. Charles Davis, *on Chemistry and Pharmacy*; Dr. Newton, *on Physiology and Pathological Anatomy*; Dr. Ford, *on the Institutes of Medicine and Medical Jurisprudence*.

Doctor Davis had been Professor of Chemistry in the Medical College of South Carolina, and Dr. Newton had acted as Adjunct to Dr. Dugas.

**MEDICAL COLLEGE OF OHIO.** We have not yet heard that the vacancies created by the resignation of Drs. Eberle, Cross, and Albin Smith, have been filled. The two first named gentlemen are now members of the Medical Faculty of the Transylvania University; the latter has taken up his residence in the city of New York, and has received the appointment of Professor of the *Principles and Practice of Surgery*, in the College of Physicians and Surgeons.

**CINCINNATI COLLEGE.** Of the efficiency and completeness of the Faculty of this institution, our readers will have formed a favourable opinion, from the advertisement on the cover of the Ninth Number of the Library and Journal.

We shall probably give, in our next, a notice of the branches taught in some other of the medical schools of the United States, with a designation of their professors. Details of this nature are acceptable to the medical reader, who is often not fully aware of even the names, still less of the organization, of many of these institutions.

**UNIVERSITY OF PENNSYLVANIA.** Without instituting comparisons, which might seem to be invidious, we would merely content ourselves with saying, that in no past time was the Medical Department of our Alma Mater, the University of Pennsylvania, more efficiently organized with reference to all the means and appliances of instruction. In the demonstrative branches, the resources are of the most ample kind. The chemical apparatus is unrivalled, and may be called truly magnificent. The lectures on Surgery are largely illustrated both by paintings and wax preparations, representing morbid structure. The Professor of Midwifery has, also, freely availed of the pictorial art, to aid him in his descriptions of the successive stages and different kinds of labour. These are all represented by paintings of a large size, which are exhibited to the class. The botanical characters and appearance of the recent plant, are displayed by similar means by the Professor of Materia Medica. Of the riches of the Anatomical Museum,—the large models of the senses, brain, &c., and the numerous preparations dry and wet, who, amongst our readers, has not heard!

## MISCELLANEOUS.

ACCOUNT OF A MAN WHO SUBMITTED TO BE BURIED ALIVE FOR  
A MONTH, AT JAISULMER,

AND WAS DUG OUT ALIVE AT THE EXPIRATION OF THAT PERIOD.

COMMUNICATED BY H. M. TWEDELL, ESQ.

I HAVE just witnessed a singular circumstance, of which I had heard during our stay at this place, but said nothing about it before, the time for its accomplishment not being completed: this morning, however, the full month was over, and a man who had been buried all that time, on the bank of a tank near our camp, was dug out alive, in the presence of *Esur Lal*, one of the ministers of the *Moharawal*, of Jaisalmer, on whose account this singular individual was voluntarily entered a month ago. He is a youngish man, about 30 years of age, and his native village is within five kos of Kurnaul; but he generally travels about the country to Ajmeer, Kotah, Endor, &c. and allows himself to be buried for weeks or months, by any person who will pay him handsomely for the same. In the present instance the *Rawal* put this singular body in requisition, under the hope of obtaining an heir to his throne, and whether the remedy is efficacious or not, it certainly deserves to be known.

The man is said, by long practice, to have acquired the art of holding his breath by shutting the mouth, and stopping the interior opening of the nostrils with the tongue; he also abstains from solid food for some days previous to his interment, so that he may not be inconvenienced by the contents of his stomach, while put up in his narrow grave; and moreover, he is sewn up in a bag of cloth, and the cell is lined with masonry, and floored with cloth, that the white ants and other insects may not easily be able to molest him. The place in which he was buried, at Jaisalmer, is a small building, about 12 feet by 8 feet, built of stone; and in the floor was a hole about three feet long, two and a half feet wide, and the same depth, or perhaps a yard deep, in which he was placed in a sitting posture, sewed up in his shroud, with his feet\* turned inwards towards the stomach, and his hands also pointed inwards towards the chest. Two heavy slabs of stone, five or six feet long, several inches thick, and broad enough to cover the mouth of the grave, so that he could not escape, were then placed over him, and I believe a little earth was plastered over the whole, so as to make the surface of the grave smooth and compact. The door of the house was also built up, and people placed outside, that no tricks might be played, nor deception practised. At the expiration of a full month, that is to say, this morning, the walling up of the door was broken, and the buried man dug out of the grave; Trevelyan's moonshee only running there in time to see the ripping open of the bag in which the man had been inclosed. He was taken out in a perfectly senseless state, his eyes closed, his hands cramped and powerless; his stomach shrunk very much; and his teeth jammed so fast together, that they were forced to open his mouth with an iron instrument to pour a little water down his throat. He gradually recovered his senses, and the use of his limbs, and when we went to see him, was sitting up, supported by two men, and conversed with us in a low, gentle tone of voice, saying, "that we might bury him again for a twelvemonth if we pleased." He told Major Spiers, at Ajmeer, of his powers, and was laughed at as an impostor; but Cornet Macnaghten put his abstinence to the test at Pokhur, by suspending him for thirteen days, shut up in a wooden chest, which, he says, is better than being buried under ground, because the box, when hung from the ceiling, is open to inspection, on all sides, and the white ants, &c. can be easier prevented from getting at his body, while he thus remains in a state of insensibility. His powers of abstinence must be wonderful to enable him to do without food for so long a time, nor does his hair grow during the time he remains buried.

\* Query feet, the word as used in that part of India, is *gor*, and means foot or leg.

I really believe that there is no imposture in the case, and that the whole proceeding is actually conducted in the way mentioned above.

This letter was written by Lieut. A. H. Boileau, of the Engineers, first assistant Great Trigonometrical survey, who at that time was employed in the survey of that part of the country. The gentlemen, whose names are mentioned in the letter, are Capt. Trevelyan, of the Bombay Artillery, and Cornet, now Lieut. Macnaghten, of the 5th regiment light cavalry, assistant to the agent to the Governor-General in Rajpootanah.

Some other information I obtained in the course of conversation with Lieut. Boileau, and which I noted down. Lieut. Boileau was unacquainted with the man's name or caste; he believed that he had taken up the life of a Fukeer; he understood that the man had been buried six or seven times, but whether for any period longer than a month he knew not; he did not hear how the man discovered his powers, or when he commenced to practise them. Lieut. Boileau arrived at Jaisulmer, after the interment, and saw the place, described in his letter, in which the man was buried. There was a guard of four or five Chupra-sees, in the employ of the muharáwul, as he understood, who were on the watch, to prevent any interference or imposition. The process of burying, and of disinterring, was conducted in the presence of Esur Loll, one of the ministers of muharáwul. The day fixed for the disinterment was known to Lieut. Boileau, but not the exact hour. Captain Trevelyan's moonshee, who had set forth to give intelligence when operations were to be commenced, arrived only in time to see the people ripping open the cloth, or shroud, in which he had been inclosed. The moonshee immediately started off a man to inform his master, and Lieut. Boileau, who were in their tents, at a distance of about three furlongs.

They waited a few seconds to apprise Lieut. Mackeson, of the 14th regiment, N. I. British Agent for the navigation of the Indus (who had declined to accompany them,) and repaired to the spot as quickly as possible. Perhaps a quarter of an hour had elapsed, since the opening of the grave, before they arrived. The people had thrown a clean cloth over the man; two of them supported him; he presented an appearance of extreme emaciation and debility; but weak as he was, his spirit was good, and his confidence in his powers unabated, as in answer to Lieut. Boileau's and Captain Trevelyan's inquiries, he said, "*that we might bury him again for a twelvemonth if we pleased.*" Lieut. Boileau examined, and measured with his walking stick, the grave in the floor of the chamber in which the man had been buried, and also the two slabs of stone which had been used to cover the mouth of the grave. For seven or eight days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to sustain life, whilst nothing remained to give employment to the excretory organs. In that state he was buried. He confesses to have great dread of the white ants. Several folds of cloth were spread on the bottom of the grave, to protect him from their attacks. On taking nourishment after his release, he is said to be in a state of anxiety, until he has ascertained that the powers of his stomach and intestines are not impaired. Lieut. Boileau saw nothing more of the man; he understood that he regained his strength, and was for some time in attendance at the durbar of the Muharáwul, in the hope of receiving his promised reward, and that tired of waiting until the purse strings of the patron were loosened, he had stolen a camel and decamped.—*India Journal of Med. and Phys. Science.*

#### PSYCHOLOGY.

M. Geoffroy St. Hilaire, the naturalist, has prepared for the Academy of Sciences a series of memoirs, to be communicated by him to that body, on the functions and situation of the soul. He states, that he has no hesitation in treating on this subject—that he feels strong in his own powers, and means, first of all, to examine the nature of the *Spiritus corporeus* of St. Angustin!—*Athenæum.*

## ON TEA OIL.

BY ROBERT D. THOMSON, M. D.

A species of fixed oil, familiarly used in China for the same economical purposes for which olive oil is employed in Europe, has been ascertained by recent travellers in China to be produced in all probability by the tea-plant, or another species of the same natural family. The author assigns reasons for believing that it either is, or may be, obtained from the seeds of various species of the two genera *Thea* and *Camellia*. It has been hitherto almost unknown in Europe. It is when fresh quite free of smell, of a pale yellow tint, without any sediment when long kept. It resists a cold of 40° F., but at 39° becomes like an emulsion. Its density is 927. It is insoluble in alcohol, sparingly soluble in ether. It burns with a remarkably clear white flame. It consists of 75 parts of elaine, and 25 of stearine; whence the author infers its elementary composition to be, oxygen 9.853, carbon 78.619, hydrogen 11.527. He is inclined to think that this oil might prove an important article of commerce in the East, because in its properties it is superior to cocoa-nut oil, and the various other oils prevalently used for burning, or as oleaginous condiments, in Asiatic countries.—*Ibid.*

## HURRICANES.

According to an Antwerp journal, which speaks of the late hurricane, the seven great hurricanes recorded in the history of Europe have all taken place in November, viz.—1st. On the 26th of November, 1282. It united the lake Fiévo to the sea, and formed the gulph now called the Zuyder Zee. 2d. On the 19th of November, 1321. It broke the dykes of Holland, and caused the destruction of seventy-two villages, and more than 100,000 persons. 3d. On the 5th of November, 1430. It occasioned a second rupture of the dykes in Holland. 4th. On the 22d of November, 1686. It a third time broke down the dykes, when twenty-five villages were destroyed, and more than 10,000 persons drowned. 5th. On the 11th of November, 1775, which also occasioned great disasters in Holland. 6th. On the 9th of November, 1800, which extended its ravages all over the continent. 7th. On the 29th of November, 1836.—*Ibid.*

## PLUMBE ON THE DISEASES OF THE SKIN.

OUR SECOND LIBRARY AND JOURNAL YEAR, which begins in November next, will open with the publication of the first part of "*A Practical Work on Diseases of the Skin*, by SAMUEL PLUMBE."

The number and complexity of the diseases of the skin, and the embarrassment which even an otherwise experienced physician often finds in treating them, cannot fail to insure for a work of full and authoritative reference, like the present one, a favourable reception. A knowledge of the subject will be facilitated in the present case by the addition of illustrative engravings, four in number, three of them coloured. The first plate is subdivided into several compartments, and exhibits the characteristic appearance of the most remarkable diseases of the skin. We have just now been shown by the artist employed for the purpose, proof impressions, from which we augur most favourably of the accuracy of the American copies for the Library edition. There is this difference, that the impressions from our plates will be more fresh and distinct than are those in the English volume.

# THE ECLECTIC JOURNAL OF MEDICINE.

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**EDITED BY JOHN BELL, M.D.**

LECTURER ON THE INSTITUTES OF MEDICINE AND MEDICAL JURISPRUDENCE;  
MEMBER OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,  
AND OF THE AMER. PHIL. SOC., ETC.

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## **OBSERVATIONS ON THE STETHOSCOPE.**

**By GEO. BUDD, M.B. F.R.S., Fellow of Caius College, Cambridge.**

[Read at the London College of Physicians.]

At the present time, when the discoveries of Laennec are well known, and when auscultation is generally practised, it may seem almost unnecessary to mention the following circumstances, with which I have ventured to introduce the subject of this paper.

In the several acts of breathing, speaking, coughing, the surfaces within the chest with which the air is brought into contact are by its action thrown into sonorous vibrations, which are transmitted through the substance of the lungs, and thence communicated to the parietes of the chest; and these sounds in their transmission obey the laws that regulate the transmission of sounds generally, and become modified in their intensity, nature, and quality, by changes in the density of the pulmonary tissue—by the presence of different secretions in the bronchial tubes—and by the effusion of fluid into the cavity of the pleura.

Again, the motions of the heart, and the passage of the blood through its interior, are productive of sounds which are transmitted in a similar manner to the parietes of the chest, and which are modified by changes in the volume of the cavities of the heart, or in the thickness of its walls, and by disease of the membrane which envelops it, or of the valves by which its orifices are guarded: and it is found that each of these circumstances produces a modification peculiar to itself, and which is sufficient, in most cases to characterize the condition on which it depends, and to enable us to form an opinion of the state of the contents of the chest, which is the more to be relied on, as resulting from the evidence of physical signs, which it is not in the power of the patient to alter or destroy. The perception of these sounds is, consequently, of the utmost importance to the physician. The simplest mode of obtaining it is by applying the ear immediately on the chest, but from the inconvenience of this method of proceeding, and from its impossibility in some cases, the stethoscope has been invented, which propagates to our ears the vibrations of the walls of the chest, and thus renders



us sensible of them at a distance. By the discovery, then, of the stethoscope, or rather of the mode of investigation to which it is applicable, another sense became enlisted for the investigation of diseases of the chest, and the condition of organs, which are excluded from our sight, becomes known to us through the sense of hearing.

The following observations were made with the view of ascertaining how the stethoscope performs this office, and on what conditions its excellence depends.

Oss. 1.—If one extremity of the stethoscope be applied to the ear as usual, and the other be brought as near as possible to, without actually touching, the chest of a person, in whom the murmurs of respiration are unusually audible, no sound can be heard.

Now, the vibrations communicated by the parietes of the chest to the air within the stethoscope, must, in this case, be nearly the same as if the stethoscope and chest were in actual contact; very little sound can be lost by diffusion through the interval that separates them, when this interval is very small.

We may then infer, that, in these cases, no vibrations sensible to the ear are communicated from the chest to the air within the stethoscope, but that they are communicated almost solely to the material of the instrument.

Oss. 2.—If, in the same circumstances, one extremity of the stethoscope be applied as usual to the chest, and the other be brought as near as possible to, without actually touching, the cartilages of the ear, no sounds can be heard; the slightest contact is sufficient to establish the necessary connexion, and to render the sounds audible.

Hence, in these cases, the vibrations of the stethoscope are not communicated in such a manner as to be sensible to the ear, to the air within the stethoscope. The sounds are therefore communicated from the chest to the material of the instrument, and are thence propagated through the cartilages and solid parts of the ear to the auditory nerve, and may be heard distinctly through the stethoscope, by a person, who, from thickening of the tympanum, is deaf to sounds of far greater intensity propagated by air.

This property of the solid parts of the ear of transmitting to the auditory nerve the vibrations of solida, may, perhaps, aid us in discovering, in cases of deafness, if the nerve be affected, or if the obstacle be in the tympanum; in the former case, the ear would be insensible of the sonorous vibrations of a solid in contact with its cartilages; and, in the latter, it would perceive them distinctly, though equally insensible of ordinary sounds. The stethoscope is, then, an instrument that establishes a solid connexion between the walls of the chest and the auditory nerve, and that serves to transmit to the latter the vibrations of the former.

The organ of hearing consists essentially in the nerve of hearing, and in an apparatus by which external vibrations are conveyed to it; and we find that in nature this apparatus is modified, so as always to be best adapted to the medium in which the animal lives. In ears which are formed for the perception of sounds in air, the air within the tympanum forms the medium of communication between the external air, which propagates the vibrations, and the nerve of hearing which is destined to receive them, this communication being only interrupted by the presence of thin membranes, which obey the slightest impulse of the air. In fishes, whose ears are intended for the perception of sounds in water, air is no longer the medium of communication, and there is no external appearance of the organ; the nerve is lodged in the cartilages of the head; the vibrations of the water are communicated to these cartilages, which are nearly of the same density as the water, and are by them transmitted to the nerve. And by the stethoscope, which is intended to render us sensible of the vibrations of a solid, we establish a solid connexion between the sounding body and our nerve of hearing, by which we are enabled to perceive vibrations of the solid far too feeble to be made sensible to us by the intervention of the air. By a modification of the instrument, in which water is made the medium of communication to the cartilages of our ears, we may render ourselves sensible of sounds in water, which, without some such contrivance, would never reach us.

I now proceed to consider the conditions on which the excellence of the ste-

thoscope, in its ordinary construction, depends; and, as the most important of these conditions, I shall first speak of the material of which it is formed.

Laennec says, "The densest bodies are not, as analogy would lead us to suppose, the best adapted to these instruments. Glass and metals communicate less perfectly than bodies of inferior density the sensations produced by respiration. From this observation, which appeared singular, I wished to try bodies of less density, and made in consequence a cylinder of goldbeaters'-skin. This instrument is worse than all others. Bodies of moderate density, such as paper, light woods, and canes, are those which have constantly appeared to me preferable to all others. This result is, perhaps, in contradiction to an axiom in philosophy, but it seemed to me perfectly constant."

This result, which Laennec considered as contradictory to an axiom in philosophy, is perfectly explicable from a knowledge of the laws of the propagation of sound. Vibrations once excited in a body, as the walls of the chest, will be communicated more perfectly to another body in contact with it, the stethoscope, as the material of the stethoscope more resembles that of the walls of the chest as a propagator of sound.

The stethoscope may, in fact, be considered simply as a medium to propagate the vibrations of one body to another body, and its excellence will mainly depend on the relation which its physical properties, considered as influencing the propagation of sound, bear to those of the bodies between which it is interposed. The metallic stethoscope, which Laennec found to be so bad, would be the best, if employed to propagate vibrations from one metallic body to another.

Vibrations excited by a watch in one plate of iron were communicated by a rod of iron and of wood, of the same size and figure respectively, to another plate of iron, and were heard by the ear placed in contact with the latter. The sounds were much louder, and of a different *quality*, when the communication was made by the metal, than when it was made by wood.

Again, wood propagates more perfectly than metals vibrations from one piece of wood to another.

Vibrations excited in a stethoscope of wood by the ticking of a watch in contact with it, were transmitted by a rod of iron and of wood successively to another stethoscope of wood, and were heard by the ear placed in contact with the latter. The sounds of the watch were heard with greater intensity when the rod of wood than when that of iron was interposed, and the sounds were of different *qualities*,—they were more *metallic*, if I may so speak, when propagated through the iron.

Thus, when sound is communicated from one body to another of the same nature by the intervention of a third body of a different nature, the quality of the sound will be modified by, and will partake of the quality peculiar to, this third body.

In the choice, therefore, of a material for this instrument, one should be selected that will not alter perceptibly the quality of the sounds which it is employed to transmit. This is the case with wood,—the sounds of the voice heard through the common stethoscope are not perceptibly of a different quality from those heard when the ear is immediately applied to the chest. With the metallic stethoscope this would not be the case; the sounds heard through it would be more metallic, and would approach nearer in quality the sounds of ægophony, and would consequently render those sounds less characteristic, and would detract from their value as a pathognomic sign.

Laennec observed that this was the case with persons whose voices partook of the character of ægophonic sounds.

The same phenomenon is observed in a striking degree with the water-stethoscope.

A membrane was fastened over one extremity of a hollow cylinder; the cylinder was filled with water, which caused the membrane, whose area was larger than the surface to be covered, to protrude beyond the extremity of the cylinder; the other end was then closed by a membrane in a similar manner. The membranes were impervious to water, and care was taken to prevent the admission of air. By properly adjusting the pressure at the two extremities, the water could

approach of death, nothing was ordered for him but a turpentine injection, there being no ground to justify a reasonable hope of recovery.

At this period it occurred to me whilst standing by his bed-side that the comatose state in which he lay might not arise from apoplexy but from torpor of the brain, in consequence of that organ being supplied with blood not duly oxygenated; for the shrill tone and extreme difficulty of respiration showed the existence of collapse of the glottis, and imperfect transmission of air into the lungs, which might be accounted for by a paralysed state of the eighth pair of nerves and recurrent branches. With this view of the case I again appealed to my colleagues, and strongly urged that a trial should be given to the operation of tracheotomy; for I could not but hope that if mechanical respiration were carried on for a time, the blood might regain its proper stimulant properties, and restore the energies of the brain and nervous system. Upon their consenting to give him this chance, the operation was performed, without loss of time, by Mr. Andrews, under whose care, as surgeon for the week, the patient was now placed.

The trachea was no sooner opened than the distension of the veins about the head and neck subsided, the violent efforts of the extra-respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was completely established; at the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist. The immediate result of the operation being thus far satisfactory, nothing remained to be done but to give directions for the frequent removal of the mucus which appeared at the wound, and to keep the surfaces of the incision asunder until the integuments and muscular layers had become agglutinated to each other; this latter object was affected by means of a piece of strong spring wire, with a bow at each end of it, which, being introduced in a bent state, was allowed to expand, and the opening in the trachea was thus prevented from being covered by the muscles, even during the efforts of deglutition.

He continued perfectly quiet during the night, but had no return of consciousness until the following morning, when he gave us to understand, by signs, that he suffered from headache and soreness at the pit of the stomach; there was a tendency to sickness, and the tongue was coated with a peculiar whiteness, as if rubbed over with chalk. Moderate purgatives, followed by mild alkaline medicines, soon removed these symptoms, and a few leeches were applied to the throat, for the purpose of checking too high a degree of inflammation; after which no further treatment was required; but the wound being healed in about three weeks, he was discharged cured, and has continued up to this time in the enjoyment of perfect health."

We think there can be little doubt that the patient was dying of asphyxia, the result of the depressing influence of alcohol upon the brain and nerves. The opening made in the trachea facilitated respiration, by establishing an aperture, not muscular and regulated by nervous influence like the glottis. In such a case, were the symptoms still more urgent, and tracheotomy ineffectual, artificial respiration should of course, be kept up. The effects of alcohol are transitory, and the view with which Mr. Sampson advised the operation is perfectly philosophical, and was, happily, successful.—*Ibid.*

#### CASE OF RECOVERY FROM THE INFLUENCE OF OPIUM BY ARTIFICIAL RESPIRATION.

BY C. IRVING SMITH, Esq. of the Mary-le-bone Infirmary.

This case may be considered a valuable pendant to the one immediately preceding. It too is contained in the last volume of the *Medico-Chirurgical Transactions*.

*Case.* Jane H., aged 25, a stout young woman, was admitted into the St. Mary-le-bone Infirmary, on the 20th of July, 1828.

"At six o'clock in the morning, she was observed by one who slept in the same room, to swallow something from a cup, the remains of which was opium. She shortly after became insensible. At 10, A. M. she was brought in. At this

time her extremities were cold and livid; the lips and face of a dark lead colour, the pulse fluttering, and scarcely perceptible at the wrist. Respiring three or four times in a minute, with sighing.

The stomach pump was applied, and that organ was carefully washed out, first with water, then with dilute acetic acid; after which, small quantities of ammonia were injected, combined with brandy. The spasm of the œsophagus was so great, on attempting to introduce the tube of the stomach pump, as nearly to destroy it.

The patient was now (11, A. M.) evidently worse than at the time of her admission; so much so, that many doubted if she still lived. The hair was next entirely cut off from the whole head, and the head placed over the edge of the bed, several buckets of cold water were poured in rapid succession over it; the nostrils being at the same time stimulated with volatile alkali. The pulse now intermitted much at the wrist, at one time being 70 or 80 beats in the minute, and the next sinking as low as 7 or 8. Respiration had now nearly ceased.

The scalp was now rubbed with the liq. ammoniæ until the entire of it was vesicated.

11½, A. M., it was determined, as the only remaining chance, to try the effects of artificial respiration; there being at this time no pulse whatever at the wrist, and only a slight irregular action at the heart, indicative that life was not quite extinct.

The mouth and one nostril being closed, a pair of common bellows was applied to the other nostril, and the chest was in that way inflated, and alternately emptied by pressure on the chest and sides. This was continued for an hour, without intermission, at which time the heart seemed to be rallying, but if left to itself, it rapidly sunk again. An ounce of the ol. terebinth, was injected into the rectum. Bottles of hot water were applied to the chest, and sinapisms to the feet and legs.

The same treatment was continued till 2, P. M., with only very slight intermission. She was at this time so evidently rallying, that it was deemed safe to leave her.

She was again seen at 3, P. M., when she was found relapsing into her former state. Recourse was again immediately had to artificial respiration, which was continued till 5, P. M., at which time it was suspended, on account of the pulse having become regular, and her having made some slight attempts to move; and showing evidence of pain on being pinched.

At 12, P. M., she became slightly sensible, and swallowed a little tea. She became eventually well; and has since married.

It was curious to see the effects of artificial respiration in this case. The livid colour of the face and extremities, rapidly giving way to a more florid hue, on every inflation, and again as rapidly returning to its original colour, on being left for a few minutes."

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## TYPHUS AND TYPHOID FEVERS.

*An Essay on Typhus Fever*, by JAMES FOUNTAIN, M.D., of Westchester County. (Transactions of the Medical Society of the State of New York, Vol. III. Part 2.)

*On the Typhus Fever which occurred at Philadelphia in the Spring and Summer of 1836, illustrated by Clinical Observations, showing the distinction between this form of disease and Dothinerteritis or Typhoid Fever.* By W. W. GERHARD, M.D., one of the Physicians of the Philadelphia Hospital, Blockley. (In two Articles in the American Journal of Medical Sciences, 1837.)

In placing the titles of these essays by Drs. Fountain and Gerhard at the head of this article, we do not consider ourselves as pledged either to a full review

and analysis, or to a critical disquisition on the subject in all its bearings. Our aim is, merely, to avail of the occasion, which these publications afford, to fix the attention of our readers on the prominent features of typhus fever, as they have appeared to the observers of the present day.

We cannot but regret, at the outset, that the terms typhus and typhoid, which should designate kindred diseases, are used to signify fevers whose distinctive characters are alleged to be essentially different. It is difficult, even after we are masters of the diagnosis of the two, to reject a belief that typhoid is but a mitigated and modified typhus, as varioloid is a mitigated and modified variola; the cause unit—the symptoms closely analogous, and the effects in no very notable degree varying in the qualifying state expressed by *oid* from that with the terminal *a* or *us*. Whereas, in the instance of the two fevers now under consideration, each has its peculiar features which the other does not exhibit. Typhus is characterised by its being contagious, and an eruption on the skin; whilst it leaves behind no uniform anatomical lesion or altered structure of organs. Typhoid, which by its derivation means like unto or resembling typhus, would seem to be in fact quite unlike this latter, since it does not uniformly or characteristically exhibit an eruption; it is not contagious; and it has, as a constant character, an anatomical lesion, which consists in an alteration, by inflammation and ulceration of the glands of Peyer and Brunner, and inflamed mesenteric glands. Basing their nosology on this last distinction, it has been proposed by some of the French pathologists to designate typhoid fever by the term *dothi-enteritis*; and thus, whilst expressing the chief structural lesion by which it is accompanied, to avoid the ambiguity of the common terminology. But we may reasonably object to this nomenclature: 1st, because it is by no means proved that the alteration of the intestinal follicles (glands of Brunner and Peyer), &c., would give rise to the symptoms, or call into sympathetic disturbances the functions of the other organs, such as we see in typhoid fever; 2d, because similar alterations are met with in other diseases; notably in phthisis, scarlatina, and cholera.

Typhus fever is, to use the phrase of Dr. Miller of New York, *idio-miasmatic*. It arises, says Dr. Fountain, from a personal source,—and this again is either, he thinks, human excreta or contagion. The first link in the pathological chain of typhus fever is, according to Dr. F., the introduction of a morbid agent, an animal poison, into the circulation of a person about to undergo an attack. This poison effects a change of condition in the whole circulatory mass, with a corresponding departure from the natural action of the apparatus by which it is kept in motion.

“The formative process of secretion,” continues Dr. Fountain, “is perverted, and nutrition suspended, and debility ensues. These conditions, debility and change of condition in the fluids progressing, the irritation breaks the restraint maintained by healthy over diseased action, and fever is the result. The exciting cause is sometimes sufficient of itself to produce all these changes; yet the morbid process may be accelerated by a sudden cold or any other predisposing cause. The general commotion having been instituted throughout the system, inflammations are next kindled up, producing more or less an inflammatory participation of action. The excitement continuing, provided no important part becomes disorganised, exhaustion soon follows; the action subsides, and a state of collapse succeeds, and a general apathy prevails. After a little repose, the system rallies and again succumbs, constituting paroxysms; and in this manner the disease may continue an indefinite length of time. Finally, the living fibre

becomes habituated to the morbid or acrimonious fluids, when like all other agents they cease to produce an effect, and the vital principle, the *primum mobile* of the system, begins gradually to substitute its own movements; the secretions begin fully to act, a little moisture is discovered in the mouth, a little perspiration on the skin, and the effect slowly increasing, if uninterrupted, rises up at length into perfect health."

Though needlessly pleonastic and figurative, this description of the origin and progress of the disease is not without merit, and we have therefore given it in the author's own words.

Doctor Gerhard tells us, on the subject of the differences between the two diseases whose titles head this article :

"On considering the symptoms of typhous and typhoid fevers, we observe that the latter disease is not confined to any particular season: it commonly attacks individuals of a particular age, and exposed to some unaccustomed mode of life. It sometimes occurs at the same time that an epidemic of autumnal remittent or of typhus exists."

A little farther on he contrasts the two fevers as follows :

"1. Dothineritis is usually a sporadic disease, although it sometimes appears as a wide-spread epidemic. In the latter case the symptoms are so well marked, that these are never doubtful, except in a few of the earliest examples. Now, typhus is very rarely sporadic, and if scattering cases do occur, they are generally connected with an epidemic and follow it, as scattering cases of the cholera were observed for a long time after the great epidemic of 1832.

"2. Typhus is evidently very contagious; in the epidemic of 1836 it was quite as contagious as small-pox. I am fully convinced of its contagious nature from extensive observation as a physician to the hospital, and from the official visits and inquiries which I made as a member of the Board of Health. Dothineritis is certainly not contagious under ordinary circumstances, although in some epidemics we have strong reason to believe that it becomes so. It bears in this respect the same relation to typhous fever that measles does to small-pox.

"3. The initial symptoms of the two affections chiefly differ in the greater stupor, dulness and prostration of typhus, which are in strong contrast to the moderate cephalalgia and disturbance of the senses in dothineritis.

"Still there are now and then, perhaps in twenty or thirty cases, some symptoms which are apparently common to the two forms of fever. Just as in the diagnosis of measles and scarlatina there is usually no difficulty, but we sometimes see cases of a hybrid character in which the most experienced physicians may be doubtful. In two or three cases out of three hundred the symptoms of typhous and typhoid fever seemed blended together; but these were slight forms of disease, which are necessarily less distinct than those of a more severe type. In practice, such cases are too rare to give rise to any difficulty.

"The more severe cases of dothineritis sometimes resemble typhous fever very closely, but the resemblance is confined to the symptoms offered by the patient in the most aggravated period of the disease, and does not extend to the succession of symptoms. Indeed, if these cases of typhoid fever are examined at the early stages of the disease, they are certainly more characteristic than the slighter varieties; and although the symptoms occurring during a single day would lead us into error, the comparison of the successive changes will always guide us.

"When the disease is completely formed, the characters on which the distinction between the two forms of fevers rest, are : 1. The suffusion of the eyes, which occurs in every case, or nearly every case of typhous fever, with the dusky-red aspect of the countenance. 2. The extreme stupor and inactivity of the mind even when positive delirium does not exist. 3. We also observe in typhus no constant abdominal symptom, and at first merely dulness on percussion and feebleness of respiration at the posterior surface of the lungs. 4. If to these symptoms be added the peculiar eruption of petechiæ, which is scarcely ever

absent in whites, there remains hardly a possibility of error. In the typhoid fever we consider as distinctive characters, the prostration, the somnolence, the slow development of nervous symptoms, which are not so strongly marked as in typhus. The abdominal symptoms are tympanitis, pains in the abdomen, and diarrhoea. The sibilant rhonchus is heard in the chest; and lastly, there is an eruption of rose-coloured papulæ and sudamina upon the skin."

Analogous to the view of Dr. Gerhard respecting typhous fever, is that of Dr. Perry of Glasgow. In a letter on this disease, published in the *Dublin Journal* for January last, this gentleman says:—

"I have for some years entertained the opinion, founded upon an extensive series of observations, that contagious typhus is an *exanthematous disease*, and is subject to all the laws of the other exanthemata; that as a general rule, it is only taken once in a life-time, and that a second attack of typhus does not occur more frequently than a second attack of small-pox, and, judging from my own experience, less frequently than a second attack of measles or scarlet fever."

Respecting the period of the fever in which the eruption makes its appearance, Dr. Perry thinks it is on the fifth, or at farthest on the sixth day from the commencement of the attack. The date at which the disease becomes contagious is later than this, being at the ninth, or perhaps not till later.

"Among many circumstances which establish this opinion, I may mention one experiment which I made upon a pretty extensive scale. The fever wards of the Glasgow Royal Infirmary are each capable of containing twenty patients. The beds are arranged in two opposite rows, and are pretty near each other. While the patients are in the acute wards, they are not allowed the use of their clothes, though they may be able to set up; they are, therefore, almost constantly confined to bed, excepting when rising to stool; and there is about one closet-stool to every three patients. Into the fever-house are admitted, cases of measles, scarlet fever, and small-pox; and patients are very frequently sent labouring under bronchitis, pneumonia, erysipelas, and other local inflammatory affections. I found by experience, that when the latter class of patients were sent to the convalescent ward, where they necessarily mixed with the others, almost all those who had not a previous attack of typhous fever were either seized with it before leaving the house, or returned soon after their dismissal, labouring under it; the period intervening between the time of their being sent to the convalescent ward, and the attack, never being less than eight days. Although means were taken to keep those recovering from small-pox, scarlatina, &c. in a separate room from those convalescent from typhus, the rooms being adjoining, the non-intercourse was incomplete, and the result was, that these diseases occasionally spread among the typhous convalescents, and the convalescents from small-pox and scarlatina caught typhus. In consequence of these observations, I adopted the practice of not sending, as formerly, to the convalescent wards, those patients affected with inflammatory diseases, unless I ascertained that they were secured against the disease by having had a previous attack of typhus; but kept them in the acute fever wards till they were so far recovered as to go to their own houses, and the result was, (and the practice was continued for several months,) that not one of those detained in the acute wards caught the disease while there, or returned with it afterwards. From the above, and other observations, I have adopted the opinion, that typhus, like measles, small-pox, &c. is chiefly spread during the period of convalescence."

It should be borne in mind, however, when speaking of an eruption, as one of the distinctive characters of typhous fever, that this is stated expressly by Chomel to be one of the peculiarities of typhoid fever; and that it appears between the seventh and ninth days.\* Dr. Gerhard admits this feature to be present, but thinks that

\* See this Journal, pp. 24, 25; article on Typhoid Fever.

the rose-coloured spots and sudamina in typhoid fever cannot be confounded with the dull livid or purple tint of the petechiæ in typhus. In the former, the eruption very seldom extends, says Dr. G., beyond the abdomen and thorax; whereas, in the epidemic typhus the eruption is almost always general, extending to the limbs as well as to the trunk.

A belief that the fever, which is now so generally called typhus, is accompanied by petechial eruption, and is contagious, has been entertained and expressed by most of the writers on the subject since the beginning of the sixteenth century. The disease has often been designated by the terms petechial fever and petechial typhus; although this latter term would indicate that there are other forms of the fever in which petechiæ are not seen. This was the case in the jail fever of Winchester described by Dr. C. Smith, to whom reference is made by Wilson (Philip) in his work on Fevers. The petechial character would seem to be more constantly seen in the typhous fever when it prevails over a great extent of country, or, as it is called, epidemically. A memorable example of this form of disease occurred in Italy in the year 1817, an account of which we transmitted at the time, in a letter written at Florence to Dr. Wistar, which was subsequently published in the first volume of Dr. Chapman's Medical and Physical Journal.\* On referring to this paper we find the following notice of the contagious nature of the fever:—

“It appears from the researches of Fracasteri and Rasori to have been imported into Italy some centuries ago, and diffused by contagion, like small-pox and lues venerea. The hospitals furnish, every year, sporadic cases of it, and its general diffusion last winter and spring is attributed to an epidemic constitution of the atmosphere laying a predisposition, operated on by scanty and bad diet, filth, and the confinement of numbers together in an impure air.”

Again,

“Some, among whom is Palloni, consider with Hildebrand and others, the petechial typhus as a distinct eruptive disease, arising from a contagion *sui generis*, like small-pox or measles; that it is the effect of miasma introduced into the system, and which assimilating to itself all the animal fluids, is brought to the surface of the body, more particularly to the cutaneous capillary system: and, also, that this typhoid is distinct from the common petechial or miliary eruption, or from scarlatina. The first is a primary and essential exanthema, differing from petechiæ, which vary in appearance, and are always symptomatic.” “Opposed to this opinion are Professors Franceschi of Lucca and Valentine [of Rome], who view the eruption as by no means an essential feature of the disease. In proof of this it has been remarked, that the eruption is sometimes absent, sometimes papillary, &c.”

“As respects the petechiæ, Palloni remarks, that from the third to the seventh day, there appears on the skin an eruption of red spots, pointed, irregular, and slightly scabrous and elevated, constituting the true typhoid [typhous] eruption, among which may sometimes be seen petechial spots. The eruptions on the neck and shoulders, where it commences, soon extends over the whole body. Though the fever does not cease with the coming out of the eruption, certainly the arterial agitation diminishes, and the catarrhal symptoms cease.”

“In opposition to this account is that of Franceschi, who has only observed the eruption on the inside of the arm and thighs, on the breast and lateral parts of the neck, and never on the face. He says, petechiæ do not terminate as other exanthematous or acute diseases of the skin, for no desquamation succeeds their appearance, nor do any traces of their presence remain. The eruption is neither

\* A History of the Contagious Fever which has prevailed throughout Italy during the greater part of the year 1817. By John Bell, M.D.



critical nor symptomatic, as is shown from the uniform shape of the spots, and from their affording no relief, or causing any detriment when they appear."

The inference from these and other histories of the disease, which it is not necessary to refer to more distinctly at this time, is, that whilst we recognise in the *quasi* exanthematous eruption a common feature in typhous fever, we cannot assert that it is an invariable one.

In the fever described by Dr. Gerhard, there was another symptom closely connected with the skin, which has been generally noticed by writers on typhus.

"It was the peculiar odour from the body of the patients. This was pungent, ammoniacal, and offensive in the most severe cases, especially in fat, plethoric individuals: in some cases the smell resembles that of putrid, animal matter, and remained so a few days before death. The patients who exhaled the odour in the strongest degree were observed to communicate the disease by direct contagion more quickly than others. In the cases of several of the nurses, there could be no doubt of the direct transmission of the disease from the person of these offensive patients. The bodies of these individuals putrefied very rapidly after death, but before putrefaction was completely established the odour was rather less pungent than it was during life. Cases of this kind are to be classed amongst those which procured for these forms of fever the appellation of putrid."

We have heard of some persons dating their sickness with this fever from the moment when they inhaled the close, impure, offensive, and contaminated air round the patient, confined in a small ill-ventilated apartment. In continuation of the enumeration of symptoms, Dr. Gerhard says:—

"The skin in whites presented other changes than those which have been mentioned. A constant symptom observed in every case was a dull, livid, red hue of the countenance, extending nearly over its whole surface: sometimes this colour approached a purple. It coincided with a strong dark suffusion of the capillary vessels of the conjunctiva which appeared at the same time with it, but usually disappeared at an earlier stage than the injection of the eyes. The conjunctiva never presented the bright red tinge or the brilliant aspect observed in acute inflammatory diseases of the brain, or of the eye itself. The expression was dull, and the blood-vessels had a dark red tinge, instead of their usual scarlet hue. The suffusion of the face and eyes was so constant and so well marked in the fully formed disease, that it served almost as a pathognomonic sign. It was generally most evident with patients of a full habit of body. Towards the close of the disease, the reddish colour was gradually changed into a dull ashen tint, which remained until the entire recovery of the patient."

We shall not repeat after Dr. Gerhard the other symptoms, familiar as they are to most of our readers. "The *cerebral* symptoms were certainly amongst the most characteristic of typhus fever. They appeared very early in the disease, and continued with greater or less intensity throughout its whole course." Those specified are *stupor, vertigo and confusion of sight, tinnitus aurium, somnolence* but *disturbed sleep, impaired intelligence* from the earliest stages.

Among the *nervous* symptoms were unusually augmented *sensibility* of the skin, when the stupor was not so great as to render the patient insensible, or nearly so, to all external impressions. The cutaneous tenderness was preceded by muscular soreness, which lessened when the skin became more sensitive.

*Subsultus* of the tendons of the wrists was observed in three cases out of four; in the more severe cases the subsultus extended to the muscles of the legs and face.

Passing over the *abdominal* symptoms, we shall notice the *thoracic* ones. These, as we learn from Dr. Gerhard, were of two kinds: "those which were

almost essential to the disease and rarely absent, and others which were accidental and frequently wanting during its whole course. The sibilant rhonchus, which is usually present in dothinenteritis, was rare in the typhus. Pneumonia was the most frequent accidental lesion; more frequent in winter than in summer, and differed from the ordinary pneumonia merely in the greater abundance of loose mucous rhonchus and the slight development of bronchial respiration, and of fine crepitus; it was also rarely attended with pain."

The pulse was usually more frequent in typhous than in typhoid fever. Of 30 cases which terminated in recovery, taken at hazard from the whole mass of observations, the pulse ranged from 70 to 140 in the minute. Of ten cases taken also without selection, and terminating fatally, the pulse varied from 68 to 150. But one patient, however, presented a pulse less frequent than 90 in the minute; and that patient, whose pulse was 68, died two or three days after the attack, before the fever was completely developed.

The temperature of the body was, as noted almost universally by writers on typhus, not only elevated above the natural standard, but was of that peculiar heat called *calor mordicans*. This pungent heat was so remarkable, that the resident physicians and others would frequently form their diagnosis from this symptom alone.

On the points of *origin* and *propagation* of the disease, Dr. Gerhard admits that it "appeared at different and remote points, some miles distant from the focus of infection, without the possibility of tracing any direct communication between those already attacked." There would seem to be, then, two modes of origin of the typhous fever in different subjects,—the one spontaneous, the other from the body of a patient labouring under the disease. Such a creed, and it is that most generally adopted by writers on jail, hospital, and camp typhus, might be considered by the sceptical to militate not a little against the doctrine of contagion, as broadly laid down by most authors on the subject of spotted typhus.

Doctor Fountain states, that in more than one instance he has known a retained placenta to produce genuine typhous fever without any evident inflammation in the uterine system; hence, he adds, the putrid colluvies must have entered the circulation. "A few years ago," continues Dr. F., "a number of fatted cattle were driven into one of the New England cities; and having been pressed too hard on a sultry day they became overheated, and some were unable to stand. In this condition they were butchered, and the consequence was a severe typhous fever in nearly all who partook of their flesh."

Opposed entirely to this modified doctrine is the declared opinion of Dr. Perry, who scouts at the idea of any other origin of spotted and petechial typhus than that of contagion by the transmission of a poison from the body of a febrile patient.

A variety of typhus termed abdominal has been attempted to be established recently by some German physicians, whose essays are analysed in the full and satisfactory manner characteristic of its editors, in the July number, for the present year, of the Edinburgh Medical and Surgical Journal. In this variety we note two circumstances which claim particular attention, as noting a distinctive if not pathognomonic character. There are the occurrence of diarrhoea, and the formation of ulcers in the muciparous follicles (glands of Peyer and Brunner)

and mucous membrane in fatal cases, and the absence, so far as the testimony goes, of the characteristic eruption on the skin.

Connected with this state of the intestinal canal, and the cause assigned of its greater frequency on the continent of Europe than in England, in the neglect by the physicians of the former to unload the bowels by purgatives, is the recent discovery of Professor Schonlein of Zurich. He has found in the excrements of patients labouring under abdominal typhus, minute microscopical crystals of phosphate, and some sulphate of lime and soda, insoluble in water, and formed, as he conceives, by the muciparous follicles. But, whilst it has been shown by Professor Schonlein that these crystals are more frequently seen in abdominal typhus, he and Professor Müller admit that they can be detected in other and various diseases. Ehrenberg had long ago observed that meconium contains microscopical crystals; and from this he concluded that the same might be occasionally found in the bodies of adults.

Respecting *anatomical lesions* observed in *post mortem* examinations of persons dead of typhous fever, Dr. Gerhard remarks on the absence of any characteristic of this nature. We do not deem it necessary to repeat the details of autopsies performed and recorded by him in his essay. He aims to show the absence of any morbid change in the glands of Peyer, in the mesenteric glands, and in the spleen—three series of organs or of organised tissues sensibly and almost uniformly changed in structure in typhoid fever or dothineritis.

Some recent investigations by some of the German physicians favour an opinion enounced some years ago by their compatriot Hildebrand and others, that typhous fever is more regularly associated with, if not in many of its main features dependent on, lesions of the brain and spinal marrow, and especially of their membranes.

Of the classes of persons affected, Dr. Gerhard tells us that "the first patients were almost exclusively from the poorest and most intemperate class of people, chiefly day-labourers. Such was the case with most of the blacks, especially the men, who were almost without exception in the habit of drinking freely of ardent spirits."

*Age of the Patients.*—After childhood, the age seemed to exercise but little influence upon the susceptibility to the disease. But children were rarely attacked by it.

The *Sex* seemed to exert little influence on the liability to the disease.

*Colour.*—The proportion of deaths among the black men was much greater than amongst the whites; thus of the whites one died in  $4\frac{1}{2}$ ; amongst the blacks one in  $2\frac{1}{2}$ . Amongst the women the reverse was true. One white woman died of  $4\frac{1}{2}$ ; but only one coloured woman in  $6\frac{1}{2}$  nearly. These two results would, therefore, appear contradictory, unless explained by other causes.

*Age.*—Twenty-two patients, eleven male and eleven female, both white and coloured, were admitted under the age of twenty (from ten to twenty years); of these not one died.

Although it does not come within the scope of our purpose, at this time, to speak of the treatment of typhous fever, we must not conclude without stating, that it is fully detailed by Dr. Gerhard, and that some very pertinent hints on the same subject are given by Dr. Fountain.

## MEDICAL SCHOOLS.

WE continue our account of the Medical Schools of the United States, begun in the Journal of last month.

**LOUISVILLE MEDICAL INSTITUTE.**—The circular Address of the President and Faculty of this institution, announces the filling up of the chairs, the period of the session, the provision made by a bountiful grant of the Louisville City Council, for a college edifice, library, chemical and philosophical apparatus and museum, &c.; facilities for clinical instruction at the Marine Hospital; also, the legal declaration signed by Messrs. Rowan, Pirtle, Guthrie, and Nicholas, of the validity of the charter, which empowers the institution "to confer such degrees as are granted by that of any Medical College in the United States;" and, finally, Resolutions of the Medical Class of Transylvania, passed on the 23d December last, expressive of its approval of the suggestion, at that time made, for the removal of the Medical School of Transylvania University to the city of Louisville.

The Faculty consists of the following professors:—Jedediah Cobb, M.D., on *Anatomy*; Joshua B. Flint, M.D., on *Surgery*; Charles Caldwell, M.D., on *Institutes of Medicine and Clinical Practice*; John E. Cooke, on the *Theory and Practice of Physic*; Lunsford P. Yandell, M.D., on *Materia Medica*; Henry Miller, M.D., on *Obstetrics and Diseases of Women and Children*; John Locke, M.D., on *Chemistry and Pharmacy*.

Doctors Cobb and Locke had filled the same chairs, respectively, which they now hold, in the Medical College of Ohio; and Doctors Caldwell and Cooke were professors on the same branches, respectively, in the Transylvania University, as those to which they are now appointed: Dr. Yandell had also been their colleague, as Professor of Chemistry. Doctor Flint is from Boston; and Doctor Miller has been for some years a practitioner in Louisville.

Doctor Locke, at this time in Europe, was appointed by the trustees, under the belief, from the assurances of his friends that he would accept. Should he decline, Chemistry will be taught during the ensuing winter by Doctor Yandell.

**COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.**—The following is the composition of the Faculty of this institution:—

J. Augustine Smith, M.D., *Physiology*; Alexander H. Stevens, M.D., *Clinical Surgery* (to lecture at the New York Hospital); Joseph Mather Smith, M.D., *Theory and Practice of Physic and Clinical Medicine*; Edward Delafeld, M.D., *Obstetrics and the Diseases of Women and Children*; John B. Beck, M.D., *Materia Medica and Medical Jurisprudence*; John Torrey, M.D., *Chemistry and Botany*; John R. Rhinelander, M.D., *Anatomy* (lectures on general, surgical, and pathological anatomy); Alban G. Smith, M.D., *Principles and Practice of Surgery*; Amariah Brigham, M.D., Lecturer on *Special Anatomy*.

**UNIVERSITY OF MARYLAND.**—In announcing the changes, by resignations and fresh appointments, in the Medical College of this institution, we were careful to abstain from any allusion even to the presumed causes, of this state of things, and the merit or demerit of the several parties in the transactions. We merely expressed what we believed to be the order of events. We have since learned, however, that we were inaccurate respecting the sequence of some of them; as when we announced that the appointment of Dr. Baxley to the vacant chair of anatomy was followed by the resignations of Drs. Potter, Hall, Smith, Griffith,

and Ducatel of the chairs which they respectively held. It should be known, in correction of this statement, that the resignation of Dr. Ducatel was on the 1st April last, and that of Dr. Smith on the 15th of the same month, whereas Dr. Baxley was not elected until the 22d June following.

The last appointment required for the completion of the Medical Faculty was that of Dr. John Frederick May to the chair of *Surgery*.

**WASHINGTON MEDICAL COLLEGE OF BALTIMORE.**—The Professors of this School are Doctors James H. Miller, of *Anatomy, Physiology, &c.*; Samuel K. Jenny, M.D., of *Materia Medica, Therapeutics, &c.*; William W. Hannay, of *Obstetrics, &c.*; John C. Monkur, of *Theory and Practice of Medicine*; John R. W. Dunbar, of *Surgery, &c.*; Edward Foreman, M.D., as Lecturer on *Chemistry, &c.*; and Washington W. Handy as Demonstrator of *Anatomy*.

Doctor Dunbar's appointment is of recent date, and followed the resignation of Dr. Mettauer. Of the new Professor of Surgery, whom we have known from boyhood, and whom, whilst knowing; have ever esteemed for his unvarying rectitude of principle, his excellent disposition, and fine intellectual endowments, we can hardly trust ourselves to speak in a manner becoming our editorial and critical self-possession. We may be allowed, however, to say, that Dr. Dunbar brings with him to the discharge of his new functions, zeal, scholarship, fondness for surgery, fluent speech, and pleasing address.

We would avail of this occasion to intreat the Faculty of the Washington Medical College to destroy the copies of their printed circular which they may have on hand, or which they can procure the possession of. The regret, which we felt some months back, at its perusal, is now increased, since our friend is one of the faculty, and impliedly an accessory to the fact of its being printed and distributed. This document is in the worst taste, and is eminently calculated to produce unfavourable impressions in the minds, we will venture to say, of every physician who reads it, against the school from which it emanates. We have heard but one opinion on the subject. In its whole strain it is only calculated to work on the passions and prejudices of the ignorant, without quickening, in the smallest degree, the love of study and of science in the minds of the intelligent.

**COLLEGE OF PHYSICIANS AND SURGEONS, of the Western District, Fairfield, Herkimer Cy., N. Y.**—The Lectures in this school during the ensuing winter will be on *Chemistry and Pharmacy*, by James Hadley, M.D.; *Anatomy and Physiology*, by James McNaughton, M.D.; *Materia Medica and Medical Jurisprudence*, by T. Romeyn Beck, M.D.; *Practice of Physic, and the Diseases of Women and Children*, by John Delameter, M.D.; *Surgery and Obstetrics*, by Reuben D. Mussey, M.D.

**MEDICAL INSTITUTION OF GENEVA COLLEGE, New York.**—The following branches are taught by their respective professors; viz., *Chemistry*, by E. Cutbush, M.D.; *Institutes and Practice of Medicine*, by Thomas Spencer, M.D.; *Obstetrics and Materia Medica*, by Charles B. Coventry, M.D.; *Anatomy and Physiology*, by James Webster, M.D. *Surgery* will be taught by Dr. Webster, also, during the ensuing session.

**HARVARD UNIVERSITY.**—The Medical Lectures in this institution are given in Boston, and last thirteen weeks, a period much too short in justice to the subjects taught, the professors, and the students. The following is the course announced: *Anatomy and Operations in Surgery*, by Dr. Warren; *Chemistry*, by Dr. Webster; *Materia Medica*, by Dr. Bigelow; *Midwifery and Medical Jurisprudence*, by Dr.

Channing; *Principles of Surgery and Clinical Surgery*, by Dr. Hayward; *Theory and Practice of Physic*, by Dr. Ware. Clinical lectures delivered as usual on the cases in the Massachusetts General Hospital.

**BERKSHIRE MEDICAL INSTITUTION.**—In imitation of the example set at the metropolitan school of Harvard University, the course in this institution lasts but thirteen weeks. The several branches and professors are as follows:—

*Theory and Practice of Medicine and Obstetrics*, by H. H. Childs, M.D.; *Pathological Anatomy*, by E. Bartlett, M.D.; *Materia Medica and Pharmacy*, by David Palmer, M.D.; *Botany, Chemistry, and Natural Philosophy*, by C. Dewey, M.D.; *Surgery and Physiology*, by W. Parker, M.D.; *General and Special Anatomy*, by R. Watts, Jr., M.D.; *Legal Medicine*, by Hon. Henry Hubbard.

**MEDICAL INSTITUTION OF YALE COLLEGE.**—The term at this institution is for seventeen weeks. The several branches are taught as follows:—*Principles and Practice of Surgery*, by Thomas Hubbard, M.D.; *Theory and Practice of Medicine*, by Eli Ives, M.D.; *Chemistry and Pharmacy*, by Benjamin Silliman, M.D. and L.L.D.; *Materia Medica and Therapeutics*, by William Tully, M.D.; *Anatomy and Physiology*, by Jonathan Knight, M.D.; *Obstetrics*, by Timothy P. Beers, M.D.

**VERMONT ACADEMY OF MEDICINE.**—The Autumnal term of this school began on the 10th of August, and was to continue thirteen weeks. The Faculty consists of four professors, who teach the branches subjoined:—*Theory and Practice of Medicine and Materia Medica*, by William Tully, M.D.; *Surgery, Obstetrics, and Diseases of Women and Children*, by Theodore Woodward, M.D.; *Chemistry and Natural History*, by John D'Wolf, Jr., A.M.; *Anatomy and Physiology*, by James H. Armsby, M.D.

**DARTMOUTH COLLEGE.**—The course of Medical Lectures lasts fourteen weeks, and is thus carried out:—*Anatomy, Surgery, and Obstetrics*, by R. D. Mussey, M.D.; *Physiology, Materia Medica, and Legal Medicine*, by D. Oliver, M.D.; *Theory and Practice of Physic*, by J. Delamater, M.D.; *Chemistry and Pharmacy*, by D. P. Hubbard, M.D.

**WILLOUGHBY MEDICAL COLLEGE, of Willoughby University, Lake Erie, Ohio.** The course for the ensuing season will be of Lectures by Amasa Trowbridge, M.D., on *Surgery and Medical Jurisprudence*; Daniel L. M. Peixotto, M.D., on *Theory and Practice of Physic, and on Obstetrics and Diseases of Children*; J. Lang Cassels, M.D., on *Chemistry*; H. A. Ackley, M.D., on *Anatomy and Physiology*; Wm. M. Smith, M.D., on *Materia Medica*.

**JEFFERSON MEDICAL COLLEGE.**—The pains taken by its Faculty to disseminate throughout the Union, the doings, intentions, and prospects of this institution, will dispense us from details of this nature. We would merely remark, that it has, we believe, sufficient real strength to allow of its refraining from a puerile vaunting about uncommon advantages and resources, which only provokes criticism, replies,\* and rejoinders, by no means profitable or pleasant. The demonstration, to use the word in a military sense, made in the last two years by a skirmishing course of occasional lectures in the month of October, not connected with nor introductory to the regular course, which begins in November, will, we hope, be followed by the real and beneficial addition of a month to the regular term, so that this shall include five months, the period now recognised by the Medical Department of the University of Pennsylvania. Satisfied with so material an amendment, this latter institution need hardly repeat the preliminary October exercises, which it, also, exhibited last year. By whatever school this

\* See Southern Medical and Surgical Journal, No. I. Vol. II., for August, 1837.

and analysis, or to a critical disquisition on the subject in all its bearings. Our aim is, merely, to avail of the occasion, which these publications afford, to fix the attention of our readers on the prominent features of typhus fever, as they have appeared to the observers of the present day.

We cannot but regret, at the outset, that the terms typhus and typhoid, which should designate kindred diseases, are used to signify fevers whose distinctive characters are alleged to be essentially different. It is difficult, even after we are masters of the diagnosis of the two, to reject a belief that typhoid is but a mitigated and modified typhus, as varioloid is a mitigated and modified variola; the cause unit—the symptoms closely analogous, and the effects in no very notable degree varying in the qualifying state expressed by *oid* from that with the terminal *a* or *us*. Whereas, in the instance of the two fevers now under consideration, each has its peculiar features which the other does not exhibit. Typhus is characterised by its being contagious, and an eruption on the skin; whilst it leaves behind no uniform anatomical lesion or altered structure of organs. Typhoid, which by its derivation means like unto or resembling typhus, would seem to be in fact quite unlike this latter, since it does not uniformly or characteristically exhibit an eruption; it is not contagious; and it has, as a constant character, an anatomical lesion, which consists in an alteration, by inflammation and ulceration of the glands of Peyer and Brunner, and inflamed mesenteric glands. Basing their nosology on this last distinction, it has been proposed by some of the French pathologists to designate typhoid fever by the term *donthinenteritis*; and thus, whilst expressing the chief structural lesion by which it is accompanied, to avoid the ambiguity of the common terminology. But we may reasonably object to this nomenclature: 1st, because it is by no means proved that the alteration of the intestinal follicles (glands of Brunner and Peyer), &c., would give rise to the symptoms, or call into sympathetic disturbances the functions of the other organs, such as we see in typhoid fever; 2d, because similar alterations are met with in other diseases; notably in phthisis, scarlatina, and cholera.

Typhus fever is, to use the phrase of Dr. Miller of New York, *idio-miasmatic*. It arises, says Dr. Fountain, from a personal source,—and this again is either, he thinks, human excreta or contagion. The first link in the pathological chain of typhus fever is, according to Dr. F., the introduction of a morbid agent, an animal poison, into the circulation of a person about to undergo an attack. This poison effects a change of condition in the whole circulatory mass, with a corresponding departure from the natural action of the apparatus by which it is kept in motion.

“The formative process of secretion,” continues Dr. Fountain, “is perverted, and nutrition suspended, and debility ensues. These conditions, debility and change of condition in the fluids progressing, the irritation breaks the restraint maintained by healthy over diseased action, and fever is the result. The exciting cause is sometimes sufficient of itself to produce all these changes; yet the morbid process may be accelerated by a sudden cold or any other predisposing cause. The general commotion having been instituted throughout the system, inflammations are next kindled up, producing more or less an inflammatory participation of action. The excitement continuing, provided no important part becomes disorganised, exhaustion soon follows; the action subsides, and a state of collapse succeeds, and a general apathy prevails. After a little repose, the system rallies and again succumbs, constituting paroxysms; and in this manner the disease may continue an indefinite length of time. Finally, the living fibre

becomes habituated to the morbid or acrimonious fluids, when like all other agents they cease to produce an effect, and the vital principle, the *primum mobile* of the system, begins gradually to substitute its own movements; the secretions begin fully to act, a little moisture is discovered in the mouth, a little perspiration on the skin, and the effect slowly increasing, if uninterrupted, rises up at length into perfect health."

Though needlessly pleonastic and figurative, this description of the origin and progress of the disease is not without merit, and we have therefore given it in the author's own words.

Doctor Gerhard tells us, on the subject of the differences between the two diseases whose titles head this article :

"On considering the symptoms of typhous and typhoid fevers, we observe that the latter disease is not confined to any particular season: it commonly attacks individuals of a particular age, and exposed to some unaccustomed mode of life. It sometimes occurs at the same time that an epidemic of autumnal remittent or of typhus exists."

A little farther on he contrasts the two fevers as follows :

"1. Dothineritis is usually a sporadic disease, although it sometimes appears as a wide-spread epidemic. In the latter case the symptoms are so well marked, that these are never doubtful, except in a few of the earliest examples. Now, typhus is very rarely sporadic, and if scattering cases do occur, they are generally connected with an epidemic and follow it, as scattering cases of the cholera were observed for a long time after the great epidemic of 1832.

"2. Typhus is evidently very contagious; in the epidemic of 1836 it was quite as contagious as small-pox. I am fully convinced of its contagious nature from extensive observation as a physician to the hospital, and from the official visits and inquiries which I made as a member of the Board of Health. Dothineritis is certainly not contagious under ordinary circumstances, although in some epidemics we have strong reason to believe that it becomes so. It bears in this respect the same relation to typhous fever that measles does to small-pox.

"3. The initial symptoms of the two affections chiefly differ in the greater stupor, dulness and prostration of typhus, which are in strong contrast to the moderate cephalalgia and disturbance of the senses in dothineritis.

"Still there are now and then, perhaps in twenty or thirty cases, some symptoms which are apparently common to the two forms of fever. Just as in the diagnosis of measles and scarlatina there is usually no difficulty, but we sometimes see cases of a hybrid character in which the most experienced physicians may be doubtful. In two or three cases out of three hundred the symptoms of typhous and typhoid fever seemed blended together; but these were slight forms of disease, which are necessarily less distinct than those of a more severe type. In practice, such cases are too rare to give rise to any difficulty.

"The more severe cases of dothineritis sometimes resemble typhous fever very closely, but the resemblance is confined to the symptoms offered by the patient in the most aggravated period of the disease, and does not extend to the succession of symptoms. Indeed, if these cases of typhoid fever are examined at the early stages of the disease, they are certainly more characteristic than the slighter varieties; and although the symptoms occurring during a single day would lead us into error, the comparison of the successive changes will always guide us.

"When the disease is completely formed, the characters on which the distinction between the two forms of fevers rest, are : 1. The suffusion of the eyes, which occurs in every case, or nearly every case of typhous fever, with the dusky-red aspect of the countenance. 2. The extreme stupor and inactivity of the mind even when positive delirium does not exist. 3. We also observe in typhus no constant abdominal symptom, and at first merely dulness on percussion and feebleness of respiration at the posterior surface of the lungs. 4. If to these symptoms be added the peculiar eruption of petechiæ, which is scarcely ever



critical nor symptomatic, as is shown from the uniform shape of the spots, and from their affording no relief, or causing any detriment when they appear."

The inference from these and other histories of the disease, which it is not necessary to refer to more distinctly at this time, is, that whilst we recognise in the *quasi* exanthematous eruption a common feature in typhous fever, we cannot assert that it is an invariable one.

In the fever described by Dr. Gerhard, there was another symptom closely connected with the skin, which has been generally noticed by writers on typhus.

"It was the peculiar odour from the body of the patients. This was pungent, ammoniacal, and offensive in the most severe cases, especially in fat, plethoric individuals: in some cases the smell resembles that of putrid, animal matter, and remained so a few days before death. The patients who exhaled the odour in the strongest degree were observed to communicate the disease by direct contagion more quickly than others. In the cases of several of the nurses, there could be no doubt of the direct transmission of the disease from the person of these offensive patients. The bodies of these individuals putrefied very rapidly after death, but before putrefaction was completely established the odour was rather less pungent than it was during life. Cases of this kind are to be classed amongst those which procured for these forms of fever the appellation of putrid."

We have heard of some persons dating their sickness with this fever from the moment when they inhaled the close, impure, offensive, and contaminated air round the patient, confined in a small ill-ventilated apartment. In continuation of the enumeration of symptoms, Dr. Gerhard says:—

"The skin in whites presented other changes than those which have been mentioned. A constant symptom observed in every case was a dull, livid, red hue of the countenance, extending nearly over its whole surface: sometimes this colour approached a purple. It coincided with a strong dark suffusion of the capillary vessels of the conjunctiva which appeared at the same time with it, but usually disappeared at an earlier stage than the injection of the eyes. The conjunctiva never presented the bright red tinge or the brilliant aspect observed in acute inflammatory diseases of the brain, or of the eye itself. The expression was dull, and the blood-vessels had a dark red tinge, instead of their usual scarlet hue. The suffusion of the face and eyes was so constant and so well marked in the fully formed disease, that it served almost as a pathognomonic sign. It was generally most evident with patients of a full habit of body. Towards the close of the disease, the reddish colour was gradually changed into a dull ashen tint, which remained until the entire recovery of the patient."

We shall not repeat after Dr. Gerhard the other symptoms, familiar as they are to most of our readers. "The *cerebral* symptoms were certainly amongst the most characteristic of typhus fever. They appeared very early in the disease, and continued with greater or less intensity throughout its whole course." Those specified are *stupor, vertigo and confusion of sight, tinnitus aurium, somnolence* but *disturbed sleep, impaired intelligence* from the earliest stages.

Among the *nerveous* symptoms were unusually augmented *sensibility* of the skin, when the stupor was not so great as to render the patient insensible, or nearly so, to all external impressions. The cutaneous tenderness was preceded by muscular soreness, which lessened when the skin became more sensitive.

*Subsultus* of the tendons of the wrists was observed in three cases out of four; in the more severe cases the subsultus extended to the muscles of the legs and face.

Passing over the *abdominal* symptoms, we shall notice the *thoracic* ones. These, as we learn from Dr. Gerhard, were of two kinds: "those which were

almost essential to the disease and rarely absent, and others which were accidental and frequently wanting during its whole course. The sibilant rhonchus, which is usually present in dothinenteritis, was rare in the typhus. Pneumonia was the most frequent accidental lesion; more frequent in winter than in summer, and differed from the ordinary pneumonia merely in the greater abundance of loose mucous rhonchus and the slight development of bronchial respiration, and of fine crepitus; it was also rarely attended with pain."

The pulse was usually more frequent in typhous than in typhoid fever. Of 30 cases which terminated in recovery, taken at hazard from the whole mass of observations, the pulse ranged from 70 to 140 in the minute. Of ten cases taken also without selection, and terminating fatally, the pulse varied from 68 to 150. But one patient, however, presented a pulse less frequent than 90 in the minute; and that patient, whose pulse was 68, died two or three days after the attack, before the fever was completely developed.

The temperature of the body was, as noted almost universally by writers on typhus, not only elevated above the natural standard, but was of that peculiar heat called *calor mordicans*. This pungent heat was so remarkable, that the resident physicians and others would frequently form their diagnosis from this symptom alone.

On the points of *origin* and *propagation* of the disease, Dr. Gerhard admits that it "appeared at different and remote points, some miles distant from the focus of infection, without the possibility of tracing any direct communication between those already attacked." There would seem to be, then, two modes of origin of the typhous fever in different subjects,—the one spontaneous, the other from the body of a patient labouring under the disease. Such a creed, and it is that most generally adopted by writers on jail, hospital, and camp typhus, might be considered by the sceptical to militate not a little against the doctrine of contagion, as broadly laid down by most authors on the subject of spotted typhus.

Doctor Fountain states, that in more than one instance he has known a retained placenta to produce genuine typhous fever without any evident inflammation in the uterine system; hence, he adds, the putrid colluvies must have entered the circulation. "A few years ago," continues Dr. F., "a number of fatted cattle were driven into one of the New England cities; and having been pressed too hard on a sultry day they became overheated, and some were unable to stand. In this condition they were butchered, and the consequence was a severe typhous fever in nearly all who partook of their flesh."

Opposed entirely to this modified doctrine is the declared opinion of Dr. Perry, who scouts at the idea of any other origin of spotted and petechial typhus than that of contagion by the transmission of a poison from the body of a febrile patient.

A variety of typhus termed abdominal has been attempted to be established recently by some German physicians, whose essays are analysed in the full and satisfactory manner characteristic of its editors, in the July number, for the present year, of the Edinburgh Medical and Surgical Journal. In this variety we note two circumstances which claim particular attention, as noting a distinctive if not pathognomonic character. There are the occurrence of diarrhoea, and the formation of ulcers in the muciparous follicles (glands of Peyer and Brunner)

and mucous membrane in fatal cases, and the absence, so far as the testimony goes, of the characteristic eruption on the skin.

Connected with this state of the intestinal canal, and the cause assigned of its greater frequency on the continent of Europe than in England, in the neglect by the physicians of the former to unload the bowels by purgatives, is the recent discovery of Professor Schonlein of Zurich. He has found in the excrements of patients labouring under abdominal typhus, minute microscopical crystals of phosphate, and some sulphate of lime and soda, insoluble in water, and formed, as he conceives, by the muciparous follicles. But, whilst it has been shown by Professor Schonlein that these crystals are more frequently seen in abdominal typhus, he and Professor Müller admit that they can be detected in other and various diseases. Ehrenberg had long ago observed that meconium contains microscopical crystals; and from this he concluded that the same might be occasionally found in the bodies of adults.

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Some recent investigations by some of the German physicians favour an opinion enounced some years ago by their compatriot Hildebrand and others, that typhous fever is more regularly associated with, if not in many of its main features dependent on, lesions of the brain and spinal marrow, and especially of their membranes.

Of the classes of persons affected, Dr. Gerhard tells us that "the first patients were almost exclusively from the poorest and most intemperate class of people, chiefly day-labourers. Such was the case with most of the blacks, especially the men, who were almost without exception in the habit of drinking freely of ardent spirits."

*Age of the Patients.*—After childhood, the age seemed to exercise but little influence upon the susceptibility to the disease. But children were rarely attacked by it.

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*Colour.*—The proportion of deaths among the black men was much greater than amongst the whites; thus of the whites one died in  $4\frac{1}{3}$ ; amongst the blacks one in  $2\frac{1}{4}$ . Amongst the women the reverse was true. One white woman died of  $4\frac{1}{2}$ ; but only one coloured woman in  $6\frac{1}{2}$  nearly. These two results would, therefore, appear contradictory, unless explained by other causes.

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## MEDICAL SCHOOLS.

WE continue our account of the Medical Schools of the United States, begun in the Journal of last month.

**LOUISVILLE MEDICAL INSTITUTE.**—The circular Address of the President and Faculty of this institution, announces the filling up of the chairs, the period of the session, the provision made by a bountiful grant of the Louisville City Council, for a college edifice, library, chemical and philosophical apparatus and museum, &c.; facilities for clinical instruction at the Marine Hospital; also, the legal declaration signed by Messrs. Rowan, Pirtle, Guthrie, and Nicholas, of the validity of the charter, which empowers the institution "to confer such degrees as are granted by that of any Medical College in the United States;" and, finally, Resolutions of the Medical Class of Transylvania, passed on the 23d December last, expressive of its approval of the suggestion, at that time made, for the removal of the Medical School of Transylvania University to the city of Louisville.

The Faculty consists of the following professors:—Jedediah Cobb, M.D., on *Anatomy*; Joshua B. Flint, M.D., on *Surgery*; Charles Caldwell, M.D., on *Institutes of Medicine and Clinical Practice*; John E. Cooke, on the *Theory and Practice of Physic*; Lunsford P. Yandell, M.D., on *Materia Medica*; Henry Miller, M.D., on *Obstetrics and Diseases of Women and Children*; John Locke, M.D., on *Chemistry and Pharmacy*.

Doctors Cobb and Locke had filled the same chairs, respectively, which they now hold, in the Medical College of Ohio; and Doctors Caldwell and Cooke were professors on the same branches, respectively, in the Transylvania University, as those to which they are now appointed: Dr. Yandell had also been their colleague, as Professor of Chemistry. Doctor Flint is from Boston; and Doctor Miller has been for some years a practitioner in Louisville.

Doctor Locke, at this time in Europe, was appointed by the trustees, under the belief, from the assurances of his friends that he would accept. Should he decline, Chemistry will be taught during the ensuing winter by Doctor Yandell.

**COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.**—The following is the composition of the Faculty of this institution:—

J. Augustine Smith, M.D., *Physiology*; Alexander H. Stevens, M.D., *Clinical Surgery* (to lecture at the New York Hospital); Joseph Mather Smith, M.D., *Theory and Practice of Physic and Clinical Medicine*; Edward Delafield, M.D., *Obstetrics and the Diseases of Women and Children*; John B. Beck, M.D., *Materia Medica and Medical Jurisprudence*; John Torry, M.D., *Chemistry and Botany*; John R. Rhinelander, M.D., *Anatomy* (lectures on general, surgical, and pathological anatomy); Alban G. Smith, M.D., *Principles and Practice of Surgery*; Amariah Brigham, M.D., Lecturer on *Special Anatomy*.

**UNIVERSITY OF MARYLAND.**—In announcing the changes, by resignations and fresh appointments, in the Medical College of this institution, we were careful to abstain from any allusion even to the presumed causes, of this state of things, and the merit or demerit of the several parties in the transactions. We merely expressed what we believed to be the order of events. We have since learned, however, that we were inaccurate respecting the sequence of some of them; as when we announced that the appointment of Dr. Baxley to the vacant chair of anatomy was followed by the resignations of Drs. Potter, Hall, Smith, Griffith,

and Ducatel of the chairs which they respectively held. It should be known, in correction of this statement, that the resignation of Dr. Ducatel was on the 1st April last, and that of Dr. Smith on the 15th of the same month, whereas Dr. Baxley was not elected until the 22d June following.

The last appointment required for the completion of the Medical Faculty was that of Dr. John Frederick May to the chair of *Surgery*.

**WASHINGTON MEDICAL COLLEGE OF BALTIMORE.**—The Professors of this School are Doctors James H. Miller, of *Anatomy, Physiology, &c.*; Samuel K. Jenny, M.D., of *Materia Medica, Therapeutics, &c.*; William W. Hannay, of *Obstetrics, &c.*; John C. Monkur, of *Theory and Practice of Medicine*; John R. W. Dunbar, of *Surgery, &c.*; Edward Foreman, M.D., as Lecturer on *Chemistry, &c.*; and Washington W. Handy as Demonstrator of *Anatomy*.

Doctor Dunbar's appointment is of recent date, and followed the resignation of Dr. Mettauer. Of the new Professor of Surgery, whom we have known from boyhood, and whom, whilst knowing; have ever esteemed for his unvarying rectitude of principle, his excellent disposition, and fine intellectual endowments, we can hardly trust ourselves to speak in a manner becoming our editorial and critical self-possession. We may be allowed, however, to say, that Dr. Dunbar brings with him to the discharge of his new functions, zeal, scholarship, fondness for surgery, fluent speech, and pleasing address.

We would avail of this occasion to intreat the Faculty of the Washington Medical College to destroy the copies of their printed circular which they may have on hand, or which they can procure the possession of. The regret, which we felt some months back, at its perusal, is now increased, since our friend is one of the faculty, and impliedly an accessory to the fact of its being printed and distributed. This document is in the worst taste, and is eminently calculated to produce unfavourable impressions in the minds, we will venture to say, of every physician who reads it, against the school from which it emanates. We have heard but one opinion on the subject. In its whole strain it is only calculated to work on the passions and prejudices of the ignorant, without quickening, in the smallest degree, the love of study and of science in the minds of the intelligent.

**COLLEGE OF PHYSICIANS AND SURGEONS, of the Western District, Fairfield, Herkimer Co., N. Y.**—The Lectures in this school during the ensuing winter will be on *Chemistry and Pharmacy*, by James Hadley, M.D.; *Anatomy and Physiology*, by James McNaughton, M.D.; *Materia Medica and Medical Jurisprudence*, by T. Romeyn Beck, M.D.; *Practice of Physic, and the Diseases of Women and Children*, by John Delameter, M.D.; *Surgery and Obstetrics*, by Reuben D. Mussey, M.D.

**MEDICAL INSTITUTION OF GENEVA COLLEGE, New York.**—The following branches are taught by their respective professors; viz., *Chemistry*, by E. Cutbush, M.D.; *Institutes and Practice of Medicine*, by Thomas Spencer, M.D.; *Obstetrics and Materia Medica*, by Charles B. Coventry, M.D.; *Anatomy and Physiology*, by James Webster, M.D. *Surgery* will be taught by Dr. Webster, also, during the ensuing session.

**HARVARD UNIVERSITY.**—The Medical Lectures in this institution are given in Boston, and last thirteen weeks, a period much too short in justice to the subjects taught, the professors, and the students. The following is the course announced: *Anatomy and Operations in Surgery*, by Dr. Warren; *Chemistry*, by Dr. Webster; *Materia Medica*, by Dr. Bigelow; *Midwifery and Medical Jurisprudence*, by Dr.

Channing; *Principles of Surgery and Clinical Surgery*, by Dr. Hayward; *Theory and Practice of Physic*, by Dr. Ware. Clinical lectures delivered as usual on the cases in the Massachusetts General Hospital.

**BERKSHIRE MEDICAL INSTITUTION.**—In imitation of the example set at the metropolitan school of Harvard University, the course in this institution lasts but thirteen weeks. The several branches and professors are as follows:—

*Theory and Practice of Medicine and Obstetrics*, by H. H. Childs, M.D.; *Pathological Anatomy*, by E. Bartlett, M.D.; *Materia Medica and Pharmacy*, by David Palmer, M.D.; *Botany, Chemistry, and Natural Philosophy*, by C. Dewey, M.D.; *Surgery and Physiology*, by W. Parker, M.D.; *General and Special Anatomy*, by R. Watts, Jr., M.D.; *Legal Medicine*, by Hon. Henry Hubbard.

**MEDICAL INSTITUTION OF YALE COLLEGE.**—The term at this institution is for seventeen weeks. The several branches are taught as follows:—*Principles and Practice of Surgery*, by Thomas Hubbard, M.D.; *Theory and Practice of Medicine*, by Eli Ives, M.D.; *Chemistry and Pharmacy*, by Benjamin Silliman, M.D. and LL.D.; *Materia Medica and Therapeutics*, by William Tully, M.D.; *Anatomy and Physiology*, by Jonathan Knight, M.D.; *Obstetrics*, by Timothy P. Beers, M.D.

**VERMONT ACADEMY OF MEDICINE.**—The Autumnal term of this school began on the 10th of August, and was to continue thirteen weeks. The Faculty consists of four professors, who teach the branches subjoined:—*Theory and Practice of Medicine and Materia Medica*, by William Tully, M.D.; *Surgery, Obstetrics, and Diseases of Women and Children*, by Theodore Woodward, M.D.; *Chemistry and Natural History*, by John D'Wolf, Jr., A.M.; *Anatomy and Physiology*, by James H. Armsby, M.D.

**DARTMOUTH COLLEGE.**—The course of Medical Lectures lasts fourteen weeks, and is thus carried out:—*Anatomy, Surgery, and Obstetrics*, by R. D. Mussey, M.D.; *Physiology, Materia Medica, and Legal Medicine*, by D. Oliver, M.D.; *Theory and Practice of Physic*, by J. Delamater, M.D.; *Chemistry and Pharmacy*, by D. P. Hubbard, M.D.

**WILLOUGHBY MEDICAL COLLEGE, of Willoughby University, Lake Erie, Ohio.** The course for the ensuing season will be of Lectures by Amasa Trowbridge, M.D., on *Surgery and Medical Jurisprudence*; Daniel L. M. Peixotto, M.D., on *Theory and Practice of Physic, and on Obstetrics and Diseases of Children*; J. Lang Cassels, M.D., on *Chemistry*; H. A. Ackley, M.D., on *Anatomy and Physiology*; Wm. M. Smith, M.D., on *Materia Medica*.

**JEFFERSON MEDICAL COLLEGE.**—The pains taken by its Faculty to disseminate throughout the Union, the doings, intentions, and prospects of this institution, will dispense us from details of this nature. We would merely remark, that it has, we believe, sufficient real strength to allow of its refraining from a puerile vaunting about uncommon advantages and resources, which only provokes criticism, replies,\* and rejoinders, by no means profitable or pleasant. The demonstration, to use the word in a military sense, made in the last two years by a skirmishing course of occasional lectures in the month of October, not connected with nor introductory to the regular course, which begins in November, will, we hope, be followed by the real and beneficial addition of a month to the regular term, so that this shall include five months, the period now recognised by the Medical Department of the University of Pennsylvania. Satisfied with so material an amendment, this latter institution need hardly repeat the preliminary October exercises, which it, also, exhibited last year. By whatever school this

\* See Southern Medical and Surgical Journal, No. I. Vol. II., for August, 1837.

at the Ecole de Médecine, then recently established by government. During the next five years he laboured most assiduously in the dissecting-room, and thus laid the foundation of that intimate knowledge of minute anatomy, which perhaps, more than any other acquirement, served to render him, like Baillie, one of the greatest masters of diagnosis in disease. In 1801, he publicly contested with Dumeril for the place of "chef des travaux anatomiques," but lost it by only one vote. Six months afterwards, however, he was elected in the place of Dumeril, who had been raised to a professorship. He now commenced to lecture upon anatomy, physiology, and pathology. In 1802, Bichat, still in the flower of his age, died; and thus the field was left almost undisputed to Dupuytren, who had been educated in the same school, and had followed out the same method of investigation, as his immortal predecessor had done. In 1803, he was elected "chirurgien de seconde classe," to the Hôtel Dieu, the largest hospital in Paris. His rivals on this occasion were Roux, Tartra, and Hedeoloff. In 1808, he was made "chirurgien en chef adjoint," and three years afterwards Sabatier, the senior surgeon, having died, Dupuytren was appointed the colleague of Pelletan. At the same time he succeeded to the chair of *medicine opératoire*, vacant by the death of Sabatier, after a vigorous contest with MM. Roux, Tartra, and Marjollin. The concours upon this occasion was one of the most animated and protracted, which has been ever known in Paris. For forty days, "les concurrents furent tenus en haleine;" they were required to give in written answers—in Latin as well as in French—to a multitude of questions proposed, to deliver extempore lectures on surgical and anatomical subjects, to perform operations on the dead body in presence of the examiners, and lastly, to write a thesis on a theme which had been given them.

Dupuytren had very nearly lost the election, in consequence of some delay in completing his thesis! He was generally a very slow composer, and at all times much fitter for the active practical duties of his profession than for the meditative occupation of the study.

He was now a prominent man in the eyes of the public; surgeon of the Hôtel Dieu, and professor of operative surgery at the Ecole de Médecine. Soon after his appointment as one of the chief surgeons to the Hôtel Dieu, Pelletan withdrew, in consequence, it was said, of frequent quarrels with his junior colleague. This is not unlikely, as Dupuytren was naturally haughty and ambitious; and all who know him, were well aware that he never could endure a rival near his throne. While yet a boy, he was fond of repeating Cæsar's saying, "that that he would rather be the first man in his own village, than the second in Rome;" and throughout his after-life, the Napoleon of surgery (as Bouillaud calls him) seems to have always acted on this rather unamiable maxim. The energy, the unceasing assiduity, the devotedness of zeal, and the eminent ability with which he performed the duties of chief surgeon of the Hôtel Dieu are above all praise. He spent between four and five hours there daily, visiting and minutely examining his patients, performing operations, superintending dissections, and lecturing. His first visit was usually paid about seven\* o'clock in the morning, and he seldom failed to return in the evening, to watch the progress of the more interesting cases. Most faithful reports of all these were drawn up by the "internes," and afterwards corrected and arranged by himself. There are at the present time upwards of 700 thick folio volumes of these reports, the cases being all arranged in alphabetical tables, preserved at the Hôtel Dieu!

In making his rounds through the hospital, he was generally reserved and taciturn; spoke little, and that little not in the most urbane manner, to the students. In all his actions, and upon all occasions he was the same calm, imperturbable being; ready and prepared for every emergency, never taken by surprise, or moved by any unforeseen danger. "Cette paix, ce calme de l'esprit, ce premier élément de tout bonheur, cette divinité de l'épicurisme, Dupuytren le cherchait en tout. Aussi, dans ses leçons, dans ses opérations, rien n'était remis à la fortune; tout était mûri, calculé, approfondi, prévu."

If there were any unusual symptoms in a case, if the diagnosis was obscure and uncertain, he refrained from giving any opinion at first; he hesitated for

\* More frequently six.

some days, thinking and reasoning upon it; and when at length he had arrived at some satisfactory conclusions, his clinical lecture on the subject was a model of excellence, full of impressive thought, and stored with the soundest practical wisdom.

Dupuytren was unquestionably one of the most *medical* of all surgeons. It was not the *art* alone, it was the *science* of surgery, which he explored so much more deeply than his contemporaries. Having his mind enriched with the most consummate knowledge of general and descriptive anatomy, and being intimately acquainted with the whole range of physiology and pathology, he took an enlarged view of every case, tracing it back to its source, discovering the causes which had produced it, the effects which the constitution, temperament, or casual circumstances had occasioned, the changes which it had already produced, and the probable event of its progress and termination. Although one of the most accomplished operators of his time, he never sought for occasions to display his dexterity; it was a greater triumph to him to supersede the necessity of an operation, than even to have performed it well. In the use of the knife, he was always cool and calm; bold and rapid when there was no uncertainty or possible chance of mistake, as in performing amputation of the limbs, and the excision of certain tumours; slow but steadily sure in the more delicate operations of his art.

No casualty ever disturbed his equanimity. On one occasion he had the misfortune to open an aneurismal tumour, supposing it to be an abscess.—Without hesitation and embarrassment, he at once proceeded to tie the artery higher up—the case did well. Every one has heard of the case of sudden death about sixteen years ago, during the excision of a large tumour from the neck of a young woman; the air entered the external jugular vein, and the girl, after uttering a few moans, died on the table. Dupuytren was the operator: “il est jeté dans une méditation profonde; le malheur devient pour lui le texte d’une des plus belles leçons qu’on ait jamais entendues; l’apropos l’inspirait; le sujet avait saisi les esprits; et surmontant ainsi son propre trouble pour expliquer ce tragique événement, il rejette sur les capricieuses lois de la nature ce que la malignité eût imputé à son imprudence.” Dupuytren was remarkably adroit at reducing dislocations. No one knew better how to divert the attention of the patient, and thus to take off in part the resistance of the muscles. We shall mention only one case.

A woman was brought into the hospital with dislocation of the shoulder. Several unsuccessful attempts to reduce it had been already made. Dupuytren, when the apparatus was ready, began to question the patient how she had met with the accident, and as she was answering, said, “your son told me you were drunk at the time.” “A ces paroles, la mère indignée tombe dans une sorte d’aneantissement, et le bras est remis.”

The immense private practice, which Dupuytren enjoyed, increased the sphere of his observation.\* He was the “*facile princeps*” of his time. His reputation was not confined to his own country; it was European. Patients from all parts of the Continent came to Paris to consult him.

He was honoured with the confidence of two kings, elevated to the rank of a Baron, decorated with various titles of distinction, and courted and caressed by the most lofty and distinguished of his country. “Que manquait-il donc,” exclaims his eulogist, “à son bonheur. Mais le bonheur n’est point dans la situation; il est dans le caractère; et Dupuytren n’était pas né pour être heureux. Tout ce qu’il avait souhaité, il l’avait à profusion; et n’y sentait que vide et désespoir.”† In 1833, his health suffered a severe shock; and in the following Spring he was induced to travel into Italy. At Rome he met with M. Esquirol,

\* Besides his private and hospital practice, Dupuytren had ample opportunities of studying gunshot wounds, and the other casualties of military surgery, in 1814, when he was appointed surgeon to his wounded countrymen, after the battle of Montmartre. The “glorious days” of July 1830 also furnished him with a vast field for displaying his consummate surgical abilities.

† We suppose that M. Pariset alludes to the domestic infelicity of Dupuytren. His lady, it appears, left her home:—and from that hour, the haughty spirit of his temper seemed to have taken on all the austerity of a misanthropic melancholy.



who, observing the restlessness and impatience of his colleague to return to Paris, asked of him the reason. "Qui vous presse?—Je songe à Hôtel Dieu," replied Dupuytren. Vous l'avez laissé dans d'habiles mains, reprend Esquirol. Oui, replique Dupuytren, mais mon devoir." He soon returned to Paris; but it was only to linger out a few months of suffering. He died in the February following, at the age of 57. On dissection, a considerable effusion was found in the cavity of the thorax, and the brain exhibited some traces of "foyers apoplectiques."

The fortune which Dupuytren had amassed was immense; equal perhaps to what had ever been made by professional exertions. It amounted to nearly £350,000. He bequeathed the sum of £10,000. to the establishment of a museum, and a professorship on pathological anatomy.

We have not alluded to the writings of Dupuytren. He has not done much himself as an author. With the exception of some memoirs on fractures of the fibula, on artificial anus, on calculus and the operation of lithotomy, and of several reports and "eloges" delivered at the Academy, we must look for the record of his doctrines and practice in the writings of his pupils and associates—in the *Repertoire d'Anatomie* of Breschet and Royer Collard, in Sanson and Begin's edition of Sabatier's *Medecine Operatoire*, in the great work of Roche and Sanson, on *Medico-Chirurgical Pathology*, in five volumes, and in his own *Leçons Orales*, published by Buet, Briere de Boismont, Marx, and Paillard.—*Med. Chir. Rev.*

#### THE LATE BARON DESGENETTES.

In M. Desgenettes the French have lost one of the most illustrious ornaments of their medicine and their military renown. His name has long been distinguished in the page of history: it was widely known, and was popular in Egypt, in Syria, in Spain, in Russia, as well as in France.

With a higher and better feeling than Hippocrates, as some of his panegyrists have said, he bestowed his professional care indiscriminately on the sick of all nations; on the Turk as well as the Christian—on the inhabitants of the north as well as of the south.

Desgenettes was born in 1762, at Alençon. He studied at Montpellier, at that time by far the most celebrated school of medicine in France, and acquired there considerable reputation by a very able thesis on the anatomy of the lymphatic system. In 1793, he entered the military service of his country, and being sent to Frejus, he there, for the first time, met with "le petit cannonier, un fier militaire," the young Buonaparte. Three years afterwards, he accompanied the fleet which carried "un autre Cæsar et sa fortune," to the shores of Egypt, as chief physician of the forces. The zeal, the courage, and professional skill, with which he ever fulfilled the duties of his arduous situation, are well known to the world. It was from him, as much as from the General himself, that the army acquired that spirit of dauntless bravery and intrepid endurance, which carried them along victorious through the sickly plains of Egypt and Syria. The soldiers had been greatly alarmed by the reports of the dreadful contagiousness of the plague. Desgenettes perceived at once the necessity of calming their fears, by one bold and decided step. For this purpose, he had recourse to an expedient, "aussi sublime que périlleux"—that of inoculating himself with the virus from a pestilential bubo, in presence of them all. He escaped the infection; and thus by a single daring, and most hazardous experiment, he not only dissipated the fears, but acquired the unbounded confidence of the whole army.

It was soon after this, that he had another opportunity of exhibiting a nobleness of character, which cannot be too often mentioned, or too warmly eulogised—he allude to his conduct on the occasion of Buonaparte's proposal to administer opium to the dying soldiers at Acre. We shall give the anecdote in Desgenettes' own words. "The General summoned me to his tent very early one morning. He was alone, with his chief aide-de-camp. After a short preamble, he said to me, 'were I in your place, I should be inclined to put an end at once to the sufferings of the plague-patients, and to the danger of their infecting the rest of the troops, by giving them opium.' I answered simply, my duty is to save." (*Mon devoir, à moi, c'est de conserver.*)

Upon this, the General proceeded with the greatest calmness to explain the motives of his suggestion, saying, that what he advised for others, he should certainly wish might be done to himself, were he similarly placed. He alluded, also, to the probable fate of his unhappy soldiers, if they were left to fall into the hands of the merciless Turks.

In conclusion he said, 'I do not wish to overcome your scruples, but I shall probably find other persons, who will better appreciate my intentions.'

General Berthier was present during this conversation; he remained silent; but afterwards he cordially approved of my conduct on the occasion.

It was not until after our return from Jaffa, that the opium was administered to between 25 and 30 of the sick soldiers. Some of them rejected it by vomiting, and ultimately recovered."

Desgenettes remained in Egypt with the army, after Buonaparte had made his escape to France. In 1802, he returned to Paris, was cordially received by the First Consul, and appointed by him Chief Physician of the Military Hospital, and Inspector General of the Army. About the same time he published his "*Histoire Medicale de l'Armée de l'Orient*,"—a model of historical and professional description.

In 1805 he visited Spain, for the purpose of examining the epidemic fever, which raged at Cadiz and Malaga; and in the following year, he accompanied the French army in their memorable campaigns in Prussia, Poland, &c.

He was present also in the unfortunate expedition to Russia, and on one occasion at Moscow, displayed to his master the same firmness and independence of spirit, which he had shown ten years before in Egypt.

Buonaparte had ordered the Foundling Hospital of Moscow to be converted into barracks for the troops.—Desgenettes remarked to him that he feared that posterity might compare him to Herod. "Herod," exclaimed the Emperor, "how Herod! What has he to do here, and in what can I be like him." "In the massacre of the innocents," replied Desgenettes.—The answer was a happy one, for the order was immediately countermanded.

In the disastrous retreat from Russia, Desgenettes was taken prisoner; but he was liberated soon after by the special orders of the Emperor Alexander. He was present at the battle of Leipsic. The Bourbon Government seems to have been unfriendly towards him, as he was deprived of several of his posts upon their first restoration.

During the "Hundred Days," Desgenettes was appointed by Napoleon chief physician of the army and of the Imperial Guard; and accompanied his master to the fatal field of Waterloo.

He was again in disgrace, when Louis was a second time raised to the throne of France; but in 1819, he was recalled, and made one of the Council of Health for the army.

During, however, the preceding four years he had been most zealously engaged in fulfilling the duties of Professor of Hygiene of Medical Physics to the Faculty of Medicine in Paris. His vast erudition, his zeal and energy, and eloquence of his language, attracted universal admiration.

In 1822, he along with ten other professors,\* was deprived of their chairs by a most iniquitous act of the government, when the ordonnance for the suppression of the Faculty of Medicine was issued.

In alluding to this event in the history of Desgenettes, his eulogist, M. Bouillaud, cannot refrain from breaking forth in most oratorical indignation. "Illustrious victims, bear up against this cruel trial. He who presides over the destinies of the world will not permit that the sacred laws of justice should be long violated with impunity, and he will teach, in due season, the kings of the earth themselves, many a sore and bitter lesson."

This allusion points to the "glorious revolution of July," when Desgenettes and the other ejected professors were restored to their dignities. He continued for several years to perform the duties of his chair, although now upwards of

\* Among the ejected professors were Pinel, Chaussier, and Jussieu. The conduct of the French Government appears to have been most arbitrary and impolitic.

seventy years of age. During lecture one day, he was struck with a slight attack of apoplexy, "comme un general est frappé d'un coup de feu sur le champ de bataille;" and although he recovered after a few weeks, he never resumed his professorial labours.

The character of his mind was that of sterling good sense and sagacity. His sturdy independence and liberality of sentiment were also generally appreciated. As a teacher, he was clear and systematic; and his lectures abounded with original and striking views. As a speaker, his manner was familiar, and to the point; in discussion, particularly in the Academy of Medicine, he has always displayed a ready command of reasoning power, combined with an animated elocution.

He wrote several things; such as the Analysis of the Absorbent and Lymphatic System, and his Medical History of the Army of the East; but his life was rather spent in action than in study, although the business of the camp did not prevent him from reading much, and of gathering from books a solid erudition, which he always knew how to use with discrimination.

He occupied his spare time in writing memoirs of his interesting and most eventful life, of which the third volume has recently appeared. His health, although infirm, continued to be tolerably good until the month of last February, when he most suddenly had another attack of apoplexy, from which he never recovered. "Mais il est temps de vous saluer d'un dernier adieu, venerable collègue. Adieu donc, trois fois adieu, O Desgenettes! Puissent vos précieux restes, se ranimant un instant, n'être pas tout-à-fait insensible aux accens d'une voix respectueuse et dévouée."—*La Presse Medicale.*

#### THE LATE M. DUBOIS.

WE have to add yet another to our list of deaths, in announcing that of DUBOIS. This distinguished veteran died at Paris, on the 30th of March 1837, in the eighty-first year of his age.

M. Dubois was the last remnant of a by-gone race—he was the pupil of Desault, and the friend of Bichat, Lavoisier, and other eminent men of the last century. His history was in several respects remarkable: he was born at Gramat; and having studied at the College of Cahors, set off for Paris at the age of twenty, where he arrived in a condition which reminds us of the early life of Goldsmith, having just two sous and a half in his pocket when he took up his abode in the gay metropolis of France. He obtained employment as a teacher of reading and writing, by which, and copying law-papers, he contrived to support himself and continue his medical education. He soon after procured an introduction to Desault, who had the penetration to discover his merit, and under whose countenance he procured employment in teaching anatomy privately. About the end of the reign of Louis XVI. he was appointed professor of anatomy, and progressively rose to a station of the highest eminence as a practitioner in surgery and midwifery. He succeeded to Baudelocque, at the hospital of the Maternité. Dubois had not the inventive genius of Dupuytren, but was remarkable for his judgment, self-possession, and manual dexterity. The accuracy and quickness of his diagnosis has been long celebrated.

He was a very eloquent lecturer, and greatly respected by his pupils, including an immense number of the present race of medical men in France.—*L. Med. Gaz.*

#### THE LATE PROFESSOR TURNER.

EDWARD TURNER, M.D. F.R.S.L. & E., Professor of Chemistry in University College, London, died on Sunday, 12th February 1837, at his residence at Hamstead. During some years, Dr. Turner had suffered very much from pain in the right side of the abdomen, for the removal or alleviation of which he had recourse occasionally to local bleeding and blisters. Within the last two years his frame, never robust, became emaciated to such a degree, that, previously to the last fatal illness, all his acquaintances felt astonishment that, though so worn and wasted, he should have never failed to discharge his duties with his characteristic quickness and energy.

In the last days of January, Dr. Turner was seized with influenza, and this disease was the immediate cause of his death. On examination after death, it was found that the lungs were the seat of extensive inflammation (pneumonia,) which had its commencement in an attack of the then prevailing epidemic. The cause of the suffering and emaciation of so long continuance was found in the pyloric end of the stomach and in the duodenum. The former was the seat of chronic inflammation and slight ulcerations; the latter was studded with numerous ulcerated points.

Dr. Turner was born in Jamaica, in which island his father possessed considerable property; but at a very early age he was removed to this country. After having received his elementary education at Bath; and studied some time with a surgeon, he was sent to the University of Edinburgh, where he graduated as doctor of medicine. Soon after having taken his degree, he returned to Bath, his English home, with a view to the practice of his profession; but the active, nervous temperament of the young physician could ill brook the tedium of "waiting for practice." In a very short time, therefore, not more than a month we believe, he went to Paris, in company with his contemporary and fellow student, Professor Christison, who had long been, and who remained to the close of life, one of his most intimate and attached friends. It was at Paris, if we mistake not, that Dr. Turner determined to pursue the study of chemistry. In Gottingen he likewise devoted himself most ardently to his favourite science under the guidance of Professor Stromeyer. In 1824, Dr. Turner began to lecture on chemistry at Edinburgh, and, on the foundation of the University of London, now University College, (1828,) was elected professor of chemistry in that Institution.

As a chemist, Dr. Turner became very early distinguished for the extent and accuracy of his knowledge, and as an acute and original observer. He published several papers in the Transactions of the Royal Societies of London and Edinburgh. The work by which he was most known is the "Elements of Chemistry," which has for some time been, perhaps, the most popular treatise on the subject in this or any other language. Its sale in this country has been very great, (averaging 3,500 in the space of two years,) and its circulation in America has been much more extensive still.

It is impossible to speak truly of Dr. Turner's general character or his moral qualities without running the risk of being accused of exaggeration. He was beloved by all who knew him for the amenity of his manners, the cheerfulness of his disposition, and his enlarged and active benevolence: while he was no less respected for his integrity, his love of justice, and the stainless purity of his life. We hold that almost universally the truest evidence as to the character of a public teacher, whether as an instructor or as a man, may be derived from his pupils; and, applying this test to Dr. Turner, no one could have excelled him.

It would be a culpable omission not to notice the sincere piety and firm Christian faith which adorned Dr. Turner, and enabled him to support ill-health, and even to contemplate death, with cheerfulness. This important point of his character was detailed and powerfully dwelt on by his friend and former colleague, the Rev. Thomas Dale, the distinguished Rector of St. Bride's, in an extemporaneous address delivered, at the request of the family, over the grave "when earth was returned to earth;" and subsequently at St. Bride's Church, in an admirable sermon, which we trust will be given to the public in a permanent form.—*Brit. and For. Med. Rev.*

#### THE LATE DR. MACNISH.

This well-known author died at Glasgow, on the 26th of December 1837, in the 35th year of his age. The first of his writings which brought him into notice, were the able papers which he contributed to Blackwood, with signature of "A Modern Pythagorean." But the works which have rendered his name widely celebrated, have been the Anatomy of Drunkenness and the Philosophy of Sleep. These have gone through several editions, both here and in America, and have been translated into most of the continental languages.

His premature death is the more to be regretted, as every successive production of his pen evinced a gradual increase of mental power, which would have

enabled him to achieve, had he lived, much more than he has done. He is said to have been carried off, after a few days' illness, by the typhous fever, which is at present so rife in Glasgow.—*Lond. Med. Gaz.*

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THE following have been received, and would be more fully noticed at the present time did space allow:—

MR. BIRD'S Address before the American Physiological Society, at their First Annual Meeting, June 1, 1837.

Introductory Address, and Catalogue of Students attending the Annual Course of Lectures on Anatomy and Surgery, delivered by F. H. HAMILTON, M.D., Auburn, 1837.

The Medical Student; or, Aids in the Study of Medicine, &c. By ROSELY DUNGLISON, M.D., Professor of the Institutes of Medicine and Medical Jurisprudence in Jefferson Medical College, &c., &c. Carey, Lea, and Blanchard. Philadelphia, 1837, pp. 323, 8vo.

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It will be seen that the essential parts of the *Circulars* of the College of Physicians and Surgeons of New York, and of the President and Faculty of the Louisville Medical Institute, have found a place in our pages.

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We believe that we shall best express in brief phrase our course of editorial action for the past year, by asking our readers to refer to the Index of the JOURNAL and to the Table of Contents of the LIBRARY. They can there learn, at a glance, how far the promises held out in the commencement of our enterprise have been realised, and can form some judgment of the extent to which they will continue to foster our future labours.

In the volume which the collected numbers of the Eclectic now forms, will be found many valuable papers, giving a clear and full idea of some of the most important diseases and their means of treatment; reviews of the works of the day; curious and novel details, available for practical purposes; in therapeutics, pathology, medical statistics and hygiene. The attentive reader will meet in its pages with matter of intrinsic and abiding worth, fitted to more than gratify the mental appetite at the moment—it will serve, also, for future substantial repast and nourishment.

Of the varied character of the Library it is not necessary here to speak. The immediate and allowable calls of the practising physician have been mainly attended to in the selection of its contents, without, however, an oversight of the wishes of the reflecting student and of professional literati. Systems of Medical and Surgical Practice, and monographs on Insanity, Tetanus, Diseases of the Lungs and of other Viscera, direct and dependent on remote irritation, Rheumatism, Clinical Medicine and Medical Institutions, have been the main subjects during the period which has elapsed.

In the Library of next year will be found monographs, full and complete in Midwifery, Diseases of Children, Diseases of the Skin, Clinical Lectures, &c. &c., with intermediate shorter works illustrative of the prominent points of medical inquiry of the day.

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END OF VOL. I.

## ERRATA.

In page 443, 9th line from bottom, for December 1837, read December 1836.

“ 444, 17th “ for purposes; read purposes,

